Volume VII, No. 3 66 March 1931

# SOAP

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## Insecticide & Disinfectant Review

Editorial and Business Offices: 136 Liberty St., New York Publication Office: Scranton, Pa.

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## Insecticide & Disinfectant Review

Volume Seven | MARCH, 1931 | Number 3

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INSECTICIDE and Disinfectant Review, which publication is included as the second section of every issue of SOAP, begins on page 83. News, articles, and editorial opinion on insecticides, disinfectants, and allied sanitary products appear in that section of this publication.

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MACNAIR-DORLAND COMPANY, INC.

Ira P. MacNair — Grant A. Dorland

136 LIBERTY STREET — PUBLISHERS — NEW YORK CITY

Subscription rate $3.00 per year. Copy closing dates—7th of month of issue for reading matter and 25th of month preceding month of issue for display advertising. Entered as second-class matter, Jan. 28, 1931, at Post Office, Scranton, Pa., under act of March 3, 1879. Circulation, February, 1931, issue 2,414 copies. Statement filed.


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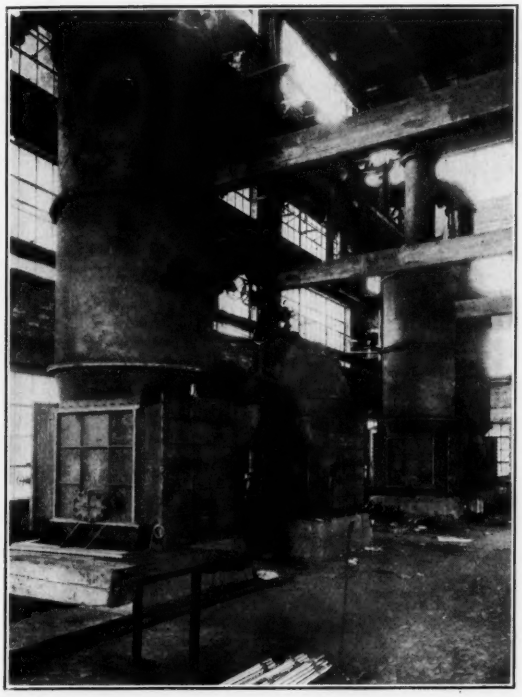


# CECO Criss-Cross Evaporator Performance and Economies Dictated the Order for Four Additional Units

**The illustration to the left shows an installation of four CECO Criss-Cross tube Evaporators in one of the largest soap plants in the West for the evaporation of spent soap lye and sweet water.**

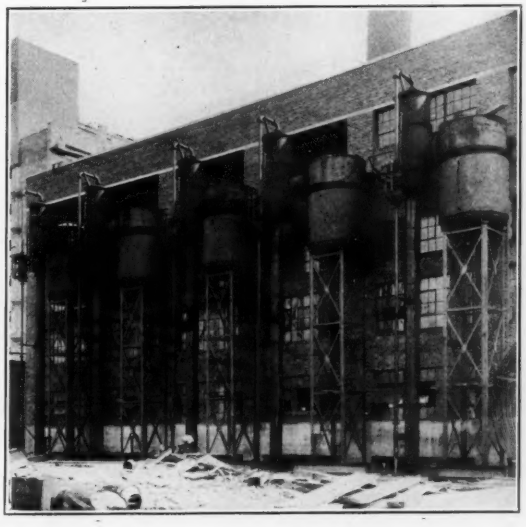
Six years ago we installed a complete CECO Criss-Cross Evaporator unit of 260 sq. ft. heating surface. The rate of evaporation being approximately 50 lb. per sq. ft. of heating surface. The unit that was displaced had approximately 400 sq. ft. of heating surface and required 24 hours to do the necessary work. The CECO unit, of about one-half the heating surface, required only six hours to do the same work.

After six years of successful operation we were given a contract to install four additional units to take care of increased production.

The company engineers who had been operating the original CECO unit claimed that tests showed greater evaporation per square foot than the guarantee. Therefore they could install CECO Criss-Cross Evaporators of a much smaller size, and practically pay for them with the saving in floor space alone. Further the original unit had required practically no maintenance expense, as the tubes had never been touched or cleaned and are in very fine condition.

The new units are the very latest development, having large vapor section for the expansion of the vapors, therefore dropping out entrainment, although catch-alls are installed as a precaution. Barometric condensers, see illustration at bottom, are used with steam jet vacuum pumps to assure the very highest vacuum that can be obtained for this type of equipment.

When considering new evaporation, whether for replacement, expansion or an entirely new operation, engineers should consider CECO Criss-Cross Evaporators very carefully, as we can show considerable improvement over the older types.



## *Chemical Equipment Company*

**MONTPELIER, INDIANA**

*Say you saw it in SOAP!*

# SOAP

VOLUME SEVEN NUMBER THREE

## The Five Year Average

LEADING soap makers, particularly those makers of branded goods which are sold nationally, are supposed to establish their selling prices yearly on a basis of average raw material costs over the preceding five years. In the type of business situation which we have had for the past year, the advantages of such a policy to the manufacturer are quite apparent. Over the next two years, we are inclined to believe that they will be doubly so, particularly when current conditions in a few other basic industries are studied.

Too quick a reduction in prices of finished products, following a drop in raw material costs, has placed some industrial groups in a distinctly disadvantageous position which will work against them when the trend of prices reverses itself. It is the easiest matter in the world to cut prices each time there is a cut in material costs. It makes selling easier *for the moment*, and it tends to please the buyer *for the moment*. But, the customer who entered a large order last week or last month, most of which is still in stock, realizes that he is at a disadvantage with the fellow who buys today. Stocks purchased at anything but the lowest price, carry the stigma of "high" prices. The market and price situation is continually in a boil, and every customer who has not been given the full advantage of the lowest prices is dissatisfied.

Where prices are stabilized over long periods, be they for soap or bricks, the buyer is always in a far safer position. He knows that he will not be the victim of sudden and frequent market changes. His competitive position is better,—he knows that he stands even with his competitors and does not have to worry over the fact that this or that item in stock cost him ten or twenty per cent more than it cost the fellow down the street.

Looking at it from any manufacturers' point of view, we must realize that selling prices based on costs of the past year alone, are going to have to be advanced, and advanced very materially over the next year or two. Although it is very easy to cut prices, it is correspondingly difficult to raise them. Buyers fight price advances irrespective of the levels from which the advances are made. Where advances do not have to be made, there is proportionately less dissatisfaction with which the manufacturer has to contend.

Price stability is advantageous to the buyer and seller alike. The smaller the number of fluctuations in price, and the less violent the changes, the better it is for the customers of any industry.

—o—

## The Same Liquid Soap

THE revised specification for liquid toilet soap issued recently by the Federal Specifications Board becomes mandatory in all Government purchases made on or after April first. No basic change has been made in any of the technical requirements of the soap itself. One or two minor revisions have been made in the method of testing, and there have been added to the original F. S. B. No. 27 some data on packaging, packing and labelling. The soap itself remains the same, a solution containing fifteen per cent of anhydrous, potash soap with a free alkali limit of 0.05 per cent.

When the issuance of a new specification was being considered by the Federal Speci-

fications Board last year, there were some reports that a limit of unsaponified fat would be included in the specification. It is understood that this was suggested by large consumers who buy liquid soap on practically the same basis as the Government standard. However, this was eventually turned down by the Board and the standard, which has been in effect since 1922, was readopted.

On the question of a limit for unsaponified oil, there is something to be said on both sides. A low content of free fat undoubtedly works for a better quality soap. The more complete and accurate the saponification, the better the soap, and the greater the keeping qualities and resistance to rancidity. At the same time, the more carefully a soap is made, and the more time taken in its making, the greater is the cost. The greater the cost, the greater must be the price. Possibly this was an element which entered into consideration. Perhaps not. At any rate, the Federal Specifications Board quite evidently considered the arguments against the inclusion of a free fat limit of greater weight than those in favor of it. Hence, the same soap which has been the subject of so much controversy over the past two years, will continue to be the standard as it has been since 1922.

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## Bargain Day in the Drug Store

THE aggressive sales policies of manufacturers of shaving cream and tooth paste over the past few years have admittedly borne fruit in increased volume of business. They have also produced results not so desirable, such as reduced margins of profit and hesitancy of consumers to buy except at "bargain" prices. Today the man who goes into a store to get a tube of shaving cream expects to have a razor, blades, and a strop thrown in all for the cut price of thirty-seven cents or thereabouts. He has become accustomed to a standard of special deals and introductory offers so that now he is no longer willing to pay what were once considered fair prices for standard articles.

In tracing the steps which led up to this situation, several responsible factors stand out. New manufacturers in the field or old manufacturers with new products started the business of introductory and combination offers in an effort to gain publicity and distribution for their products. Their competitors, seeing the volume of their trade cut by these special offers, felt called upon to respond with similar offers. Then the razor manufacturers added complications to the situation by adopting the questionably sound policy of practically giving their razors away in order to secure prospective customers for their blades which were not reduced materially in price. Offer has been followed by counter-offer so that now when one goes shopping for a tube of shaving cream, it is not uncommon to find that while a single package of the preparation is priced at fifty cents, it is possible on the bargain tables to pick up two packages, a new kitchen sink and a set of Indian clubs, all for the special price of forty-two cents.

It is difficult to see how any profit can be made by selling combination offers at such ridiculously low prices. And, if we investigate the reasons behind some of these offers, it is often discovered that the manufacturers contemplate losses, and only adopt this method of publicity to secure consumer familiarity with their products. When the new products have all been introduced to the users, we suppose the makers plan to get back to the old basis of selling at reasonable prices. Meanwhile, the public is being rapidly educated to buy only trick combinations at bargain prices.

—o—

A miniature soap plant was in operation at the Museum of Science and Industry, Chicago, late last month as part of an exhibition to acquaint the general public with the connection of chemistry with daily life. Batches of soap were turned out and then experiments were performed to show the chemical action of soap in cleaning. Other industries whose operations were illustrated included paint and varnish, glass, match manufacture and heavy chemical.

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Two soap factories have recently been put into operation in French West Africa, one in French Guinea and one in Dahomey. The annual production is estimated at a little over 200 tons.

# COCONUT OIL

By GEORGE W. HIPP
Spencer Kellogg & Sons Sales Corp.

The Coconut Palm Supplies food, drink, and shelter to the natives of the Tropics.

PERHAPS no tree is so little known generally, yet is so vitally important, as *Cocos Nucifera*, the coconut palm. There is hardly another tree to be found that has such manifold uses. For centuries, the coconut palm has been the greatest single factor in the existence of tropical natives. It furnishes them with food and drink, their huts are made from its wood and leaves, their clothing also from its leaves, and utensils and fuel from the covering of the nut meat. The dried meat, or copra, gives them a commodity for trade, thereby a source of income.

It is the copra, and the oil extracted from the copra that plays such an important part in our own civilization, in that it in turn furnishes us with food, toilet and household soaps, bakery products, confectionery, and feed for our cattle. The fibrous covering of the fruit also has its uses in weaving floor coverings and other household articles. A Singhalese proverb states truly that the coconut palm serves 99 different purposes, and that the hundredth will also be found.

The coconut palm is found in great abundance in Southeastern Asia and Oceania. It is also native throughout the American tropics but in scant abundance, insufficient for most commercial purposes. The tree is not indigenous to Africa where the oil palm, from which palm oil and palm kernel oil are obtained, flourishes. Here it is well to differentiate between the coconut palm and the oil palm. They are entirely different species, do not grow in abundance in the same localities, and their oils are not at all similar in characteristics. While they can be used one with the other, they cannot be entirely substituted for each other.

The coconut palm thrives best between the two tropics, in a high temperature, ample sunshine and a heavy, evenly distributed rainfall. The tree does not store much moisture, therefore it flourishes best where the roots can reach the water and where it has the additional advantage of the seawinds. It is essentially a lowland, and particularly, a coastal plant. Sunlight is of extreme importance, as is also good soil drainage.

Ordinarily it takes from five to eight years for

The bags of copra as they are brought in by the natives are stored for later crushing.

a coconut palm to bear fruit, and under average conditions, the tree reaches full bearing about the tenth year. While the life of the tree is not definitely known, it is estimated at between seventy and eighty years. Naturally, toward the end of the tree's life, its bearing diminishes. The period of bearing is, perhaps, sixty years. The tree forms but one vegetative bud during its life, and from this the branches develop, from twelve to nineteen a year. The nuts develop in the axils of the branches. In certain sections, climatic conditions governing, bearing trees produce varying quantities annually. Trees in some localities have been known to produce as many as two hundred nuts, but that is a rare exception. The general average for all sections is probably between twenty-five and fifty.

The coconut crop must be harvested at various times during the year as the nuts mature. The nut is of slow development and takes about a year to ripen. The mature fruit has a smooth, yellowish outer covering, underneath which is a fibrous layer or husk up to two inches in thickness. The seed, or kernel, is encased in a hard shell in a cavity of the husk and in this shell is the meat, about one-half inch thick. It is spherical in shape and hollow inside, is perfectly white and has a taste something like almonds. As long as the fruit is not ripe, the hollow contains a sweetish liquid, or coconut milk, which in the course of maturity becomes a fleshy pith. The meat of the coconut palm when dried becomes copra, and this is the source of coconut oil. This product has become one of the most important of the Philippine Islands, which supply the greatest share of our needs.

Clean, well-ventilated warehouses prevent deterioration of the copra while drying.

COPRA production in the Philippines is still in a rather primitive stage. Plantation cultivation does not exist on a large scale, and the quantities thus obtained are far in the minority when considering the entire production. For the most part, copra is produced by natives operating in a meager way. These natives cultivate perhaps a few acres. The bearing trees require little or no attention except in gathering the crops, and therefore the native has time for other pursuits, such as truck farming or working for others in the better organized productions of rice, abaca (hemp), tobacco and corn.

When the fruit is ripe, the nuts are taken from the husks and split in two, usually by axes. There are two generally used methods of drying the copra, sun-dried and smoke-dried. In those sections where plenty of sunshine can be expected, the meats in the half shells are placed on racks and left in the sun to dry. In the course of drying the meat separates from the shell. The meat

The coconut oil is transferred from crushing plant to tank steamers in special tank barges.

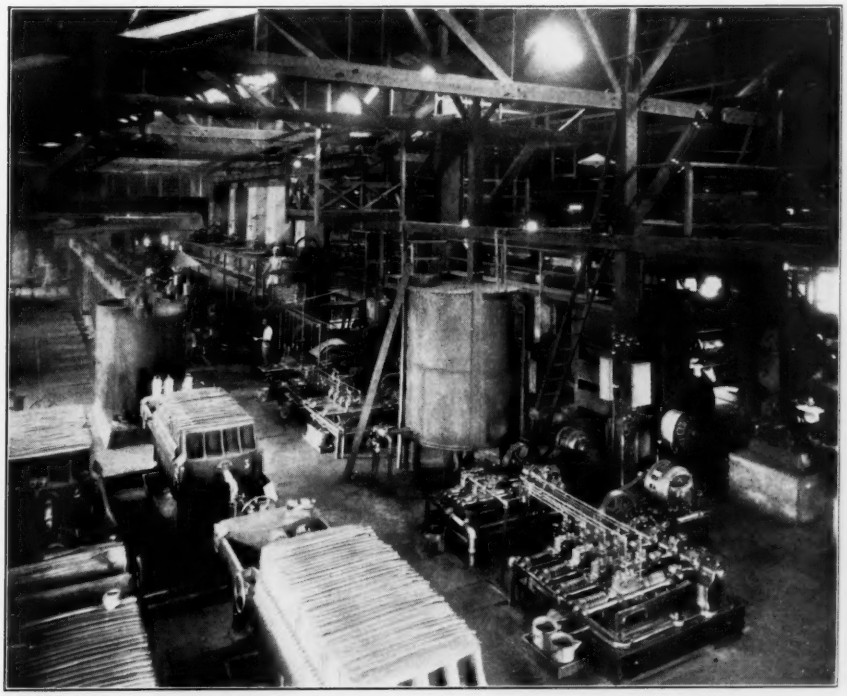
is sufficiently dried or cured in from three to five days after which it is packed in sacks and is ready for the market.

Smoke-dried copra is produced in those sections where there is insufficient sunshine. The preparation for drying is the same as for sun-dried. The meats in the shells are placed on a bamboo grate under which is built an oven. The discarded husks are used for fuel. The meat is dried by the hot air and smoke from the oven and is cured in about twelve hours.

The cured copra in bags is taken by the natives to a trading station and sold or traded for other merchandise, or both. The trading stations gather an accumulation and sell or trade it to dealers in the large concentration centers, where it is sold to the Philippine mills for crushing into coconut oil, or for export, usually to crushers located on the Pacific Coast of the United States.

Since credit and banking facilities are unknown to the native copra producers, the medium of exchange is cash. This follows all along the line, and when a crusher contracts for a quantity of copra, he has to cover immediately with cash. Copra is purchased on contract for shipment from interior concentration points. It ordinarily takes thirty days after the copra is bought and paid

(*Turn to Page* 77)



Interior view of a modern copra crushing plant in the Philippine Islands.

# A Few Points on PINE SCRUBBING SOAPS

By WILLIAM E. WILKINSON

IN SPITE of the quality of some of the products which are being offered on the American market as pine scrubbing soap, or pine scrub compound as you will, the popularity of the liquid pine soaps is on the increase and the demand for them is growing. For scrubbing floors, and this is the chief if not the only use of this product, a well-made pine scrub soap has numerous advantages in convenience of use, and detergent qualities which account for its popularity. The increased use of pine scrub is probably being made in some cases at the expense of soap powders and special powdered detergents. The fact that the pine soap already is in liquid form—in the form of a soap solution—and mixes immediately in all proportions with hot or cold water, is easier to handle and dispense than powders, may account for a considerable part of its popularity. Then there is to be considered the disinfectant action of the pine oil, or what is really more important, the deodorizing action, and the pleasant odor of pine oil which it leaves behind.

Pine scrub soaps have to meet, like all other products, the unfortunate circumstances created among consumers by poorly made soaps, particularly ones which lack uniformity. If a correctly balanced mixture of fats and fatty acids with the required alkali is not properly saponified, the finished product is very likely to separate, leaving uncombined fats and soap on top, and a strong watery alkaline solution on the bottom of the drum. Manufacturers cannot expect consumers to shake up a thirty or fifty gallon drum of soap before using it, and it is distinctly up to the soap maker to produce a product which will not separate or require further agitation after it leaves the plant. Because of the use to which pine scrub is put, there may be some tendency toward carelessness in its manufacture. It should be clearly understood that the product is not just a mere mixture of fats, pine oil, caustic and water. Exact calculations of ingredients is just as essential if the product is to be accurately saponified as in the case of any other soap product.

PINE scrub soap may be made either by the cold process or by the half boiled method, but I have found by experience that the latter is by far the better. The fatty stock may consist of

Large tile and composition floor areas mean large scrubbing soap consumption.

linseed oil, cotton oil, soya bean oil, corn oil, lard oil, yellow grease, or red oil, all according to which may be purchased to advantage at any particular time. Whichever oil is used should be dried and free from moisture as the presence of moisture will upset the calculations of the necessary lye needed to saponify the batch. A varying percentage of rosin may be used to advantage, and this with yellow grease and cotton oil, for example, will make a good soluble soap base for the purpose.

The kettle should be a flare shaped round dished-bottom tank of approximately 500 gallons working capacity, equipped with top drive vertical agitator geared to rotate slowly. The tank should be jacketed about one-third up from the bottom with steam and cold water connections to regulate the temperature. It should also be equipped with steam gauge and safety drip line and open steam coils. The draw-off connection should be three inches in diameter and placed on the bottom with two, two-inch diameter extensions and valves, so that two drums can be filled at one time. This equipment will make two or three batches a day of 20 to 30 fifty-gallon drums of finished pine soap.

THE general steps in the actual saponification, varying according to ingredients and proportions to be used, is as follows: Charge the kettle by first covering the bottom with six inches of water. Turn on steam and shovel in the rosin, seeing that this is cracked nut size and clean. Use soda ash to saponify the rosin. This must be boiled till a clear soap is obtained. Then weigh out accurately the lye required for the saponification of the fats to be used, also the water required, which must be either distilled or well boiled and chilled to less than 170° Fahrenheit.

Take one-third of the lye and one-third of the water, mix these together. This weak lye is the fitting lye. Then add one-third of the fats, but shut down the steam first, and add the fitting lye slowly keeping the mass agitated slowly. The temperature at this stage should be 170° F. As the soap thickens, add more or all of the fitting lye and some of the balance of the stock. You will note here that in making half boiled or cold made soaps, the trick is in holding back the lye and only add lye as saponification takes place.

After the balance of the fat stock and lye is well incorporated, the temperature will rise to about 180° F. Add the balance of distilled water and the pine oil, keeping the mass agitated until the temperature begins to fall. At this time, it is well to make a test for the water content and add such water as was boiled out in the operation. As the temperature drops, run cold water through the jacket of the tank. This will facilitate cooling. The soap at this time should be smooth without signs of lumps or floating pieces, and without foam. Draw off at 120-140° F.

THERE are many good formulas for pine scrub soap, but I hesitate to give them, for in the hands of the uninitiated, they are just the same as most formulas—of little value—and they lead in many instances to trouble and expense. It is possible to use all rosin as the soap base of a pine scrub, and this has the advantage of producing a low-cost product, but it lacks the detersive properties of a scrub containing a good proportion of fat or fatty acid. It also lacks the sudsing qualities of a soap containing fat and

this is a distinct drawback in many cases because consumers are prone to judge the cleansing ability of any soap product by the amount of suds formed. Of course, the proportions of fat, and alkali vary according to whether corn, bean, cotton, or other oil, or grease are used, and also with the proportion of rosin incorporated.

THE pine oil is an important feature of a pine scrub and has a greater function than merely giving a strong pine odor to the soap. Its action is two-fold. First, it has the property of being a disinfectant against certain types of germ life, and where it may not have definite disinfectant properties in the dilution in which it might happen to be used, it is an effective and powerful deodorant. Second, the pine oil incorporated as part of a liquid soap is there in sufficient proportion to have a solvent action on greasy and waxy substances, and puts them in a form so that they may be readily emulsified by the soap and removed from the floor under treatment.

Pine scrub soaps are like all other soap specialties. Just as long as they are sold in good qualities and do their work well, they will be in good demand. The offering by some manufacturers of cheap, low-grade scrub compounds which are ineffective, will operate against all makers of the products. It is far better to buy a good grade scrub from a manufacturer whose product has stood the test of time, and resell it, than it is to sell a poorly and inaccurately made product which will only reflect on the maker, and on pine scrub soaps as a class.

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## 500 At Oil Trades Banquet

All attendance records were broken at the fifteenth annual dinner of the Oil Trades Association of New York, held in the grand ballroom of the Hotel Roosevelt, February 18. Over five hundred members and guests were present, including Charles D. Jones, president of the Oil Trades Association of Philadelphia, P. T. Ruegger, president of the New Jersey Oil Trade Association, and Maxwell Katz, president of the Westchester Oil Trade Association, all of whom gave short informal talks. Clifford T. Weihman of Smith Weihman Co., New York, presided and introduced the speaker of the evening, Sir John Ballinger, Scotch journalist, who delivered a humorous talk. A vote of thanks was extended to Joseph C. Smith, Philip C. Meon and Albert J. Squires, who shared most of the duties of preparation for the affair.

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White King Soap Co., Fresno, Cal., has distributed $130,000 among its employes as a profit sharing dividend for the year, 1930. This exceeds by a considerable amount the sum divided in 1929.

## Analyze Soap and Cleanser Sales

Better than average profits for those stores that increased the value of the average sale of soaps and cleansers was revealed in an analysis of sales of these commodities through the 26 retail grocery stores studied in the Louisville survey, it is shown in "Selling Soaps and Cleansers through Retail Stores," recently issued by the Department of Commerce. Net profits were found to be seriously affected by low average value of soaps and cleanser sales. In the store having the largest volume of sales of these commodities, for example, profits on such sales were shown to be largely dissipated by the small size of individual sales. The average value of the individual sale of soaps and cleansers in this store was only 0.42 per cent as great as for all commodities.

Through personal selling suggestions on the part of the clerks, proper display, and action-getting price quotations for quantity purchases, the report points out, the proprietor was able to increase the average size of sale per customer and improve his profit position. Two hundred and sixty separate soap and cleanser items were carried by the twenty-six grocery stores studied, to produce 2.5 per cent of the total sales. Average stock turn for the line as a whole was 6.7 times a year, and the average gross margin for all stores was 24.4 per cent. "Selling Soaps and Cleansers through Retail Stores," published in multigraph form, presents in detail an analysis of profit and loss factors, sales, earnings and operating factors, broken down by the various subgroups of commodities included in this line.

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## Philadelphia Quartz 100th Anniversary

The 100th Anniversary of Philadelphia Quartz Co. was celebrated recently by a dinner at a Philadelphia hotel, with about 200 people present. The oldest person present was John McNamee, who became associated with the company 60 years ago. William T. Elkinton, chairman of the board of directors, and grandson of the founder, Joseph Elkinton, reviewed the historical background of the company. A series of slides and motion pictures portrayed the growth of the business and the present personnel. Each individual associated with the company was the recipient of a telechron clock, token of good will and appreciation from the executive staff.

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Monsanto Chemical Works, St. Louis, recently mailed to the trade reprints of an article on safe handling of acids which appeared in the February, 1931, issue of *Factory and Industrial Management.*

# Evaluation of Detergency

By JAMES G. VAIL*
Chief Chemist, Philadelphia Quartz Co.

DURING the past several years, we have been investigating washing processes. This effort has been directed only toward developing a test which shall properly evaluate and compare detergent materials applicable to laundry practice. The problem has proved to be a difficult one, owing to the large number of factors which enter into the cleansing processes.

When one considers the wide variety in fabrics, the still greater number of kinds of dirt, the differences due to time, mechanical action, temperature, and concentration of liquids, the complexity of the matter becomes evident. Reduction of these variable factors to a minimum has been the first objective. Selection of a single uniform type of cloth, and of standard grades of pure soap, was comparatively simple. Not so, however, have been the questions relating to the character of the soil, the methods of applying it the treatment of the soiled cloth, and the judging of the results.

## Character of the Soils

DURING the earlier part of the work, it was felt that a soiling material should resemble many types of ordinary dirt in containing a pigment and an oily material, either animal, vegetable or mineral. It was soon realized, however, that any given oil or grease could not be depended on to be identical at different times and places. Starchy materials were tried, but were open to the same objection as the oils. The trend of sentiment recently has been in favor of simple pigments, not because any one of them would closely represent ordinary dirt, but because of their constancy. This feeling of preference has been strengthened by the fact that the really difficult part of clean washing is in removing the last traces of pigments, which hold on long after all signs of oily or starchy vehicles have passed away.

Two pigments have received more attention than any others—carbon black and raw umber. Both of these have sufficient coloring power and are closely related to materials encountered in laundry practice. The former is open to the objection that many commercial grades do not disperse well in pure water, and so give a spotted effect instead of an even color when applied to cloth. Moreover, it is very difficult to remove the last traces of a well-dispersed black.

## Methods of Soiling

WHEN oily and starchy soiling materials were being tried, attempts were made to apply them to cloth by printing or by suspending in a mobile vehicle such as carbon tetrachloride. These were not entirely satisfactory. Two methods of applying simple pigments in pure water have been found to give fairly even colors. In one, a suspension of about 5 gm of umber in 100 ml of water is made by stirring in the pigment. A strip of cloth, say 5 x 12 inches, is wet with water, stirred for a moment in the umber suspension, and passed between the rolls of a household clothes-wringer. The treatment is then repeated until the color of the cloth no longer changes. This is effected in 3 or 4 passes. The cloth is then shaken by hand with successive portions of water until the liquid comes away clear.

If a lighter shade is desired, it is better to have less umber in the suspension, and repeat the treatment until the desired color is attained.

The second method involves the use of the Launderometer, to be described under Methods of Washing. A piece of cloth, 3 x 5 inches, is folded once and sewed along the edges to form a bag of 3 x 2½ inches. Inside the bag are placed 50 balls of Monel metal (described below). Fifty more balls, the bag, and a suspension of 1 gm of umber in 100 ml of water, are placed in a jar and rotated for an hour with the temperature held at 60° C. It is thought that this method can be depended on to produce uniform results, time after time.

## Methods of Washing

IN considering these, it has been recognized that many factors enter into the washing process. Detergents may operate in part by emulsifying oils, altering interfacial tensions, and in other ways. Determination of any one or more of these effects does not give the desired answer. The committee has felt that the only convincing test of detergent power is one based on the results of actual washing.

Many of the variable factors in the washing process have been brought under control in the

*Report of Detergents Committee, American Oil Chemists' Society. James G. Vail, chairman.

Launderometer, made by the Atlas Electric Devices Co. of Chicago. This machine has a metal tank with rounded bottom, supported in an open framework. Through the middle of the tank extends a shaft, bearing 16 threaded posts. By means of clips and wing-nuts, twenty "lightning" jars may be attached. A motor with speed-reducing mechanism, rotates the shaft at about 40 r.p.m. The tank is filled with water to about the level of the shaft, when in use. Heat is applied by a perforated-pipe gas-burner underneath the tank. Rubber or metal balls may be placed in the jars to increase the mechanical action. Balls of Monel metal, ¼-inch in diameter have been found satisfactory.

The temperature, time of contact with the detergent solutions, their concentration and relative volumes, and the amount of mechanical action, within limits, can all be arranged at will. A temperature of 60° C. is convenient to work with. There may well be a doubt, however, as to whether any one temperature is best for all detergent solutions, their concentration and relapressure, with consequent danger of leakage, it is well to heat the solutions before placing them in the jars. When a flat piece of cloth is used, it sometimes attaches itself to the lid of the jar and thus escapes the intended agitation. To avoid this, the piece may be made into a bag, as described above. An objection to this is that the seams, and parts close to them, do not wash as rapidly as the main part of the bag.

## Judging the Results

EARLY in the work of the Committee it was thought that a numerical statement of the relative efficiency of two or more detergents might be obtained by noting the number of washings required to produce a given shade. A color chart was devised, for comparison. The results by several experimenters did not agree well enough to encourage adoption of this method. Another plan was to print the color in stripes across the cloth. Washing was to be continued until the marks ceased to be visible. Difficulties were encountered in judging when the stripes actually disappeared.

These two methods serve as illustrations of two different standards of judgment. To some it seems that, since clean washing is what is demanded commercially, perfect cleanness should be attained in any evaluation test. Others hold that practical value is shown better by the results secured during the early stages of washing. There is some hope that these views may be harmonized by plotting the early changes and from them deducing when perfect cleanness would be reached if washing were continued long enough. As worked out thus far, it has been found that the last traces of pigment persist with remarkable tenacity. To remove them an expenditure of time is required which some consider excessive and impractical. It has also been found very difficult to decide just when the last traces have disappeared. A help in this direction has been the use of an unsoiled blank which receives just the same treatment, in its own jar, as the soiled specimen. The end is reached when the two become indistinguishable. Even this is not as easy as might be expected. An interfering feature is the fact that detergents do not all give the same shade of white on unsoiled cloth. The last traces of pigment may harmonize better with one blank than with another.

If judging is done during the early stages of washing, some form of colorimeter device seems to be essential. It would also be of value in determining the end-point, if complete cleanness or agreement with blanks, becomes the accepted standard of judgment. Members of the Committee have used the Ives tintometer, the Taylor photometer as modified by Rhodes, and other instruments, in judging the specimens of cloth. At present, no form of apparatus has been adopted.

From the foregoing it will be clear that the problem is far from solved. It is felt, however, that progress has been made and that further cooperative effort may lead to valuable results.

## Chemical Show Tickets Available

Tickets for the Thirteenth Exposition of Chemical Industries, scheduled for Grand Central Palace, New York, the week of May 4th, may be secured at no cost from the MacNair-Dorland Co., publishers of *Soap*. Your request should be sent on your company letterhead as early as possible as our supply is limited. Subscribers and advertisers will receive preference in the preliminary distribution. Announcements of exhibits indicate there will be much of interest to manufacturers of soaps and sanitary products, particularly in new machinery developments. The annual Chemical Industries Dinner, held under the auspices of the Salesmen's Association of the American Chemical Industry, which has already been set for May 7, will be an added feature of the week which many will be interested in attending.

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E. Victor Donaldson was elected president of the Robert Gair Company, at the Annual Meeting, February 26, to succeed George W. Gair, who was re-elected chairman of the board of directors. Mr. Donaldson has been vice-president and general manager and will continue his managerial direction in the new post. The meeting also elected Edwin R. Marshall first vice-president. The other officers and members of the Board were re-elected.

# Soap Industry Leads in Fat Consumption

THE soap industry is the largest consumer of oils, fats, and greases in the United States with an annual total in excess of 800,000 tons, according to figures of the Bureau of the Census of the Department of Commerce. Lard substitutes are next in order with 700,000 tons and paint and varnish third with 225,000 tons. The following tabular statement compiled from the quarterly reports for 1929 shows for eight specified industries and a group of miscellaneous industries the consumption of the several primary animal and vegetable fats and oils. It should be noted that consumption as here referred to embraces only that of factories which use these materials in the production of other fat and oil products, and products of which they form a constituent part, in addition to the tin plate, textile and leather industries, the products of which do not contain or retain any considerable portion of the fats and oils used as agents in their manufacture.

The total consumption in all industries for each item is the same as given in the bulletin for 1929 except for those vegetable oils for which the crude and refined products are indicated in the regular reports, viz: cotton seed, coconut, corn, peanut, palm-kernel and soya bean oils. For each of these a net consumption was arrived at by deducting from the total of both crude and refined consumed the amount of refined produced, and the loss in refining, considered as having its equivalent in the foots used in soap manufacture, was placed as primary oil used by that industry.

In some cases, where the operations of individual factories as reported covered two or more of the specified industries, it was necessary to segregate the quantities for a number of items in accord with such information as was available. However, it is believed that the statistics as presented closely approximate the facts.

(*Turn to Page* 40)

**Factory Consumption of Animal and Vegetable Fats and Oils, by Industries: 1929**
**(Quantities in thousands of pounds)**

| | All Industries | Lard Substitutes | Oleomargarine | Soap | Paint and Varnish | Printers Ink | Linoleum and oil cloth | Textiles | Misc'l. Industries |
|---|---|---|---|---|---|---|---|---|---|
| Total | 4,197,175 | 1,396,881 | 300,560 | 1,618,953 | 452,207 | 24,950 | 133,018 | 19,100 | 251,506 |
| Cottonseed oil | 1,372,295 | 1,161,848 | 30,173 | 167,033 | 96 | 12 | ..... | 3 | 13,130 |
| Peanut oil | 11,851 | 3,586 | 6,306 | 1,667 | ..... | ..... | ..... | 43 | 249 |
| Coconut oil | 652,617 | 72,145 | 185,507 | 393,914 | ..... | ..... | ..... | 49 | 1,002 |
| Corn oil | 56,755 | 25,459 | ..... | 25,602 | 364 | ..... | ..... | 46 | 5,284 |
| Soya-bean oil | 17,903 | 82 | 11 | 6,396 | 5,815 | 71 | 3,229 | 267 | 2,032 |
| Olive oil, edible | 2,067 | ..... | ..... | 23 | ..... | ..... | ..... | ..... | 2,044 |
| Olive oil, inedible | 5,858 | ..... | ..... | 2,375 | ..... | ..... | ..... | 2,508 | 975 |
| Sulphur oil or olive foots | 38,875 | ..... | ..... | 38,448 | ..... | ..... | ..... | 262 | 165 |
| Palm-kernel oil | 56,598 | 11,824 | 1 | 44,532 | ..... | ..... | ..... | 179 | 62 |
| Rapeseed oil | 13,327 | 138 | ..... | 132 | 95 | ..... | ..... | 148 | 12,814 |
| Linseed oil | 501,235 | ..... | ..... | 1,916 | 340,166 | 23,894 | 112,855 | 161 | 22,243 |
| Chinawood oil | 97,474 | ..... | ..... | ..... | 88,386 | 437 | 5,963 | 17 | 2,671 |
| Vegetable tallow | 8,470 | ..... | ..... | 8,404 | ..... | ..... | ..... | 42 | 24 |
| Castor oil | 28,835 | ..... | ..... | 3,730 | 3,287 | 36 | 522 | 13,115 | 8,145 |
| Palm oil | 198,017 | 1,191 | 1,523 | 178,851 | ..... | 7 | 7 | 540 | *15,898 |
| Sesame oil | 10,076 | 5,215 | ..... | 4,835 | ..... | ..... | ..... | 2 | 24 |
| Perilla oil | 2,639 | ..... | ..... | ..... | 2,573 | 10 | ..... | ..... | 56 |
| Other vegetable oils | 2,558 | 102 | 29 | 1,714 | 240 | ..... | 301 | ..... | 172 |
| Lard | 45,869 | 23,123 | 22,628 | ..... | ..... | ..... | ..... | ..... | 118 |
| Edible animal stearin | 52,245 | 44,138 | 6,135 | 503 | ..... | ..... | ..... | ..... | 1,469 |
| Oleo oil | 56,360 | 7,553 | 48,226 | 339 | 17 | 37 | ..... | 1 | 187 |
| Tallow, edible | 28,452 | 25,556 | 21 | 1,782 | ..... | 9 | ..... | ..... | 1,084 |
| Tallow, inedible | 514,755 | ..... | ..... | 451,835 | 42 | 6 | ..... | 1,351 | 61,521 |
| Grease | 227,612 | ..... | ..... | 154,288 | 524 | 381 | ..... | 344 | 72,075 |
| Neat's foot oil | 6,330 | ..... | ..... | ..... | ..... | ..... | ..... | 21 | 6,309 |
| Fish oils | 188,102 | 14,921 | ..... | 130,634 | 10,602 | 50 | 10,141 | 1 | 21,753 |

*Includes 15,512 thousand reported by the tin plate industry.

*Say you saw it in SOAP!*

# A Classification of Oils and Fats For Tariff Purposes

By JOHN B. GORDON

THIS is a statement made before the United States Tariff Commission on February 17, 1931, by Mr. Gordon as representative of the Bureau of Raw Materials for American Vegetable Oils and Fats Industries, and placed in the record of the hearings held on that day on the tariff rates on oils, fats, and allied products.—The Editors.

I WISH to take a few minutes of your time to place in the record a classification of oils and fats. This classification does not contain every oil and fat of organic origin known in nature, but it does contain every one which is of any importance in the commerce of the United States, whether of foreign or domestic nature.

This classification, which is approved by the foremost organic chemists in America, divides the oils and fats into three groups; namely, the drying field, or group, the edible field, or group, and the non-drying industrial field, or group. The drying field, or group, embraces such oils as China wood oil, perilla oil, linseed oil, soya bean oil, and menhaden fish oil. These oils are called drying oils because if spread out on a surface, they will dry, leaving a hard film. This characteristic makes them valuable for mixing with pigments, metal oxides, resins, and the like, to form some kind of surface preservative, such as paint or varnish; likewise, their drying property makes them valuable for the manufacture of such articles as linoleum oilcloth, and the like.

The edible field or group, embraces such oils and fats as lard, cottonseed oil, peanut oil, corn oil, oleo oil, oleo stearine, edible tallow, and edible olive oil. The oils and fats which constitute this group are those which have been found to be so well adapted to usage as human food that, under modern day conditions, both for economic and technological reasons, they are used for little other than edible purposes. Butter, while not printed on the specimen chart, which I am using for demonstration purposes, of course belongs solely in the edible field, or group; it being, however, essentially a table fat and therefore standing somewhat apart from the other oils and fats in the edible field, it was left out of the chart. It could, however, with perfect propriety, be included in group two of the classification.

The third group, the non-drying industrial group, embraces a miscellaneous collection of oils, all marked by one unchangeable characteristic, which is that they do not possess the power of drying. In other words, if you spread them out on a piece of glass and allow them to remain there, they form no surface film but retain their oily condition. The chief use of all these oils and fats in the non-drying industrial group is for industrial purposes. In fact, some of them have absolutely no other usage. The oils and fats composing the non-drying industrial group are, palm oil, inedible olive oil, palm kernel oil, coconut oil, rapeseed oil, sesame oil, non-drying sea animal oils, such as whale oil, and the offal and refuse oils and fats such as greases from garbage, tallow rendered from shop fats collected in restaurants, hotels, butcher shops, the tallow produced in packing-houses, and the like. The only field of usage on which these non-drying industrial oils could possibly encroach would be that of the edible field, and that encroachment would be relatively small, as they are largely not suitable for edible usage. Since they will not dry, they cannot be used for the manufacture of any of the articles for which the oils composing the drying field, or group, may be used.

WHEN the Tariff Act of 1930 was framed, the industrial users of vegetable oils pointed this fact out to the Ways and Means Committee of the House, and the Finance Committee of the Senate, at the same time stressing the great importance of the imports of these oils and fats for industrial purposes. The industrial users of these oils pointed out that these oils were not, for the most part, native to the United States; that there was a great deficiency of supply of industrial oils and fats in the United States; and that economic considerations warranted their continued importation.

Congress took cognizance of the fact that practically all the oils produced in the United States,

with the exception of linseed oil, soya bean oil. and menhaden oil, are edible oils and fats, and that the domestic production of oils and fats, with the exception of those in the drying field, are used practically 100 per cent. for edible purposes. It undoubtedly was apparent to Congress that, as long as the non-drying industrial oils and fats were kept out of competition with the United States' production of edible oils and fats, there was no protective purpose which could be served by placing a duty upon them. Therefore, when the Tariff Act of 1930 was constructed, Congress provided that all of these oils which had any appreciable edible usage could be imported, either at low rates of duty, or duty free, provided they were "rendered unfit for use as food or for any but mechanical or manufacturing purposes, by such means as shall be satisfactory to the Secretary of the Treasury and under regulations to be prescribed by him."

While the industrial users recommended that they do so, Congress did not require that palm oil be denatured because it could not be found that it had any appreciable usage for human food, and it did not require that coconut oil be denatured because, while in excess of 30 per cent of it is used for edible purposes, the chief source of supply is the Philippines and it was not felt desirable to interfere with the trade relations of the Philippines by denying coconut oil of Philippine origin access to edible oil markets.

I have here a booklet containing the letters of some of the foremost organic chemists in America, stating that the classification of oils and fats which I have discussed here is a commonly used one and that there can be no competition between the various groups when the precaution is taken to render inedible those non-drying industrial oils and fats which might be used for edible purposes.

I wish to place one of these booklets on file as an exhibit. I need read only one of the letters, that of Roger Adams, head of the Chemistry Department and Professor of Organic Chemistry at the University of Illinois. Most of the letters reflect practically the same sentiment and that of Doctor Adams, who is one of America's outstanding organic chemists, is typical. He states: "Classification of the oils and fats into the field of drying oils, non-drying oils for industrial usage, and edible oils is one which has been used for a long time, not only by the industry, but has always been taught to our students in organic chemistry."

I WOULD point out to the Commission that it becomes self-evident that there is a great deficiency of industrial oils and fats in the United States when we consider that the great bulk of the importations fall within that group. Only a small portion of our importations of oils and fats are edible purposes, and edible olive oil accounts for the greater portion of these importations. The only other imports of major importance are represented by linseed oil in the form of flaxseed, and also, there is China wood oil, both of which are in the drying field. Neither of these, however, is the subject of investigation by the Tariff Commission at this time. The only oil which the Tariff Commission is investigating which does not fall in the non-drying industrial group in the classification which I have submitted for the record, is perilla oil, which is imported only in very small volume for the manufacture of paint enamels.

I wish to point out that the oils and fats which are produced in the United States are, every one, heavily protected. In groups one and two, all the oils therein bear heavy protective duties, with the exception of China wood oil and perilla oil in group one, which were left duty free by Congress because they compete with nothing which is produced in the United States. In group two, every oil and fat classified therein is protected by a heavy duty. Thus, it may be seen that every oil and fat produced in the United States is already heavily protected. There is no reason for additional protection because the oils and fats which are now allowed into the United States, either duty free or at low rates of duty, are either noncompetitive with the domestically produced oils and fats, or else the volume in which they can be imported is so small that they can present no economic menace to the domestic production of oils and fats.

THE gentlemen here who would like to see high duties on every kind of oil and fat, dispute this statement. They allege that the various oils and fats are interchangeable with domestic vegetable oils, such as cottonseed oil, corn oil, peanut oil, etc. Well, this is not the fact. These oils and fats are no more interchangeable than are the various metals. Suppose someone were to set up the claim that all metals were interchangeable, without any consideration of economic factors or better adaption for a specific usage on the part of any specific metal. You would have precisely the same background as that which the claim of our opponents has, that these various oils and fats are interchangeable with domestic oils and fats. They are not interchangeable with these oils. If an oil is a drying oil, it finds its most profitable field of usage in the drying field. If it is an edible oil,

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# Hold Hearings on Oil Tariff

The extent to which imported vegetable and animal oils compete with domestic oils was debated by importers and domestic producers at the U. S. Tariff Commission hearing held February 17. Except for whale oil no attack was made by domestic producers on the oils used in soap manufacture, the principal discussion centering on the imported oils which compete with American fats and oils used in edible products.

A UNITED STATES TARIFF COMMISSION inquiry, launched at the behest of the Senate for the purpose of probing costs of production and transportation of the American markets of coconut oil and copra from the Philippine Islands, and other producing regions, palm oil, kernel oil, whale oil, rapeseed oil, perilla, and sesame oils was held at the office of the commission in Washington, D. C., February 17, with representatives of interests concerned in sharp conflict on the question of whether imports of these oils are actually in competition with domestically produced fats and oils to the detriment of the latter. For more than six hours, attorneys for producers, chemists, manufacturers and technicians caused to be entered upon the records of the proceedings, volumes of statistical argument and scientific opinion in the interests of their respective causes. At the conclusion of the hearing, announcement was made that a period of 30 days will be allowed in which supplementary briefs may be filed. The entire field of oil and fat uses was covered in the hearing, extending from manufacturing to cookery, with expert opinion heard relative to influences of the absence of tariff on most of these oils on the tinplate field, the preparation of lubricants, oleomargarine production, paint, varnish, soap, biscuit and candy making.

Although it was not disclosed at whose suggestion the Senatorial resolution predicating the inquiry was introduced, the opposition to present conditions was handled almost entirely by Attorney A. M. Loomis, representing the Texas Cotton Seed Crushers Association and the National Dairy Union, and present, as he explained, also as observer for the Oklahoma Cotton Seed Crushers Association. Charles W. Holman, counsel for the National Cooperative Milk Producers Federation, and Attorney W. R. Ogg of the American Farm Bureau Federation, were also aligned with the opposition to continuance of these oils on the free list.

Scarcely a word of protest was uttered against such of the imports as go into the production of soaps, paints, lubricants, etc., the opposition being grounded almost entirely on the argument that much of the oils entering the country is being employed to compete with the American fats and oils used in edibles. Some mention was made of the fact that whale oil, produced in ever lessening quantities in this country, can be employed successfully in soap making, but cross-examination on this point, disclosed that none of the witnesses advancing this claim was in possession of proof to that effect.

Whether or not there is a degree of interchangeability of imported oils with domestic products which is conducive of serious competition was argued at length and it was on this point that most of the technical evidence was adduced. It was principally with relation to the oleomargarine field that the use of palm oil as an edible was argued. Attorney Holman characterizing the growth of this business as the greatest menace the dairy business has ever faced. He presented a report of the Bureau of Internal Revenue to substantiate his statement that palm oil, sesame and coconut oils, imported to this country, are steadily eliminating oleo oil, cottonseed oil and peanut oil, domestic productions, as ingredients in the manufacture of oleomargarine, and he predicted that unless the situation is cured, American dairymen will be forced into the international market to dispose of their butter fat.

William R. Morse of New York City, told the commission that the fishing corporation, of which he is the head. has not operated for two seasons, due to the inability of meeting foreign competition in oils. His corporation produced fertilizers and fish oils. Mr. Morse presented the objections of the American Fish Oils Association, the Virginia Fish Association, the California Fish Consumers Association and the Pacific Packers Association, members of which, he said, are experi-

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# UNIFORMITY

THE "Diamond" manufacturing process has been so perfected as to permit the most exacting quality control. This control extends from the company-owned sources of the raw products to the laboratory test and analysis of the finished products.

Diamond Alkalies are, therefore, products of constant, unchanging quality and absolute uniformity. Their chemical reaction in your process is always uniform time after time and year after year.

## Diamond Alkali Company

**Pittsburgh, Pa.** ***and Everywhere***


# DIAMOND ALKALI

*Say you saw it in SOAP!*

## Little Unemployment in Soap Industry

FEW of the men in the long lines of the jobless have come from the soap industry. Among the soap manufacturers, employment has been normal on the whole, and better than normal in some cases. These are the first findings of an inquiry which is being made throughout the soap industry by the Association of American Soap and Glycerine Producers. The study is at the request of Colonel Arthur Woods, for the President's Emergency Committee for Employment. The Committee is seeking authentic information not only as to employment statistics, but as to the methods used to keep employment at the normal level, and to bring to the industry the greatest possible stability. The industry's response to Colonel Wood's request has been immediate and hearty.

Thirty-nine companies, representing the major portion of the entire industry in the matter of production and the number of employees, had replied by the end of February to the letter sent by Roscoe C. Edlund, manager of the Association. The general tone of their comments is that business conditions in the soap industry are very satisfactory. While some companies have felt the depression, others have increased and expanded their operations. This applies to large and small companies alike, and to all sections of the country. The companies from which replies have been received, so far, are located in sixteen states, so that the general deductions from their replies are national rather than sectional. It is earnestly requested by Mr. Edlund that companies which have not already sent in this information do so at once.

Employment conditions, according to company statements, reflect in general the business done. However, even where there has been loss in sales volume, the companies have made successful attempts in many instances to keep employment normal. In the industry are some notable examples of management plans to keep production stable.

While the complete findings will not be available until all replies are in, the preliminary report indicates that there have been practically no layoffs in the soap industry. This satisfactory condition has not been secured without much thought and effort. Many companies have created repair and paint work to take care of slack time among employees. While some companies have reduced the hours of daily employment so that a greater number of men could be used, few of them have made any drastic reduction in the hourly wage rate. One company, for instance, which reports that at times during the past eighteen months it had been necessary to slow down operation by

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## F. T. C. Hears Colgate Naptha Case

Oral arguments on the complaint of the Federal Trade Commission against the Colgate-Palmolive-Peet Co., were made before the Commission here March 2. They disclosed that all the practices which had been made the basis for the complaint issued in May, 1930, have been discontinued, and that the major practices had been discontinued long before the Commission's complaint was issued.

The charges in this complaint related to the content of naptha in certain soap products, at the time they reached the retail buyers. The Commission alleged that the amount of naptha remaining in the product by the time it reached the consumer was negligible and not enough to be a factor as a cleaning agent. It held, therefore, that the use of the word naptha in such designations as "Sea Foam Naptha Powder," "Sea Foam Naptha Soap," and "Peet's A-B Naptha Soap," was misleading and, in fact, a misrepresentation of the product.

In June, 1930, the Colgate-Palmolive-Peet Co. filed its reply to this complaint, pointing out that "Sea Foam Naptha Powder" or "Sea Foam Naptha Soap" had not been merchandised under that designation since 1927, or three years before the complaint was issued, and that "Peet's White Naptha Soap" had not been so displayed or resold since some time in 1929, a year before the complaint was issued. The respondent admitted that through oversight it had continued the use of a wrapper on which was the statement, "a chemical union of ammonia and naptha," after the company had discontinued the use of ammonia in its products. This wording, as soon as it was called to the company's attention, also was discontinued. Mason Trowbridge, appearing for the Colgate-Palmolive-Peet Co., suggested that in view of these facts and the further fact that the company had been willing to sign a stipulation in regard to the use of the word naptha, the Commission exercise its discretionary powers and refrain from issuing an order against the company, dealing with practices long since discontinued. The Commission now has the case under advisement for final disposition.

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Cincinnati Mailing Device Co., Cincinnati, is now marketing a new and improved safety edge screw cap for use on its mailing cases. All standard sizes are offered.

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The government is appealing from the recent decision of the U. S. Customs Court that a shampoo powder is dutiable at 15% as all other soap rather than at 75% as a toilet preparation.

# SECURITY PRICES

PRICES of stocks of soap, chemical insecticide, and allied companies as quoted on the New York Stock Exchange, Curb Exchange, other exchanges and over-the-counter are given in the following table. This table of prices is compiled monthly for *Soap* by a representative of one of the oldest and best-known brokerage houses in New York.

| | High 1931 | Low 1931 | Feb. 1 1931 | Mar. 2 1931 |
|---|---|---|---|---|
| Allied Chem. | 182¾ | 153½ | 157¾ | 163⅛ |
| Amer. Agric. of Del. | 29¾ | 20 | 2 | 25⅞ |
| Amer. Cyan. "B" | 12¾ | 7⅝ | 9⅜ | 11¼ |
| Armour of Ill. "A" | 4½ | 3 | 3 | 3⅛ |
| Bon Ami "A" | 63 | 60 | 61 | 63 |
| Brillo | 6¼ | 5⅛ | 6 | 6 |
| Colgate, P. P. | 49⅞ | 47 | 47¼ | 48 |
| Corn Prod. | 86⅝ | 76½ | 81⅞ | 83 |
| Dow Chem. | 50⅜ | 45 | 48 | 49 |
| Drug, Inc. | 72½ | 61½ | 67¾ | 71 |
| Du Pont | 102⅞ | 83¼ | 87¼ | 96⅝ |
| Glidden | 16⅛ | 8⅝ | 9⅞ | 13 |
| Gold Dust | 39⅝ | 31¼ | 35¾ | 37⅛ |
| Gulf Oil | 75½ | 63¾ | 66¾ | 66½ |
| Heyden | 13 | 12 | 13 | 12 |
| Intl. Agric. | 5¼ | 3⅛ | 3⅝ | 4⅝ |
| Lehn & Fink | 34¾ | 24 | 27¾ | 33 |
| Mathieson | 31½ | 23⅛ | 23¼ | 26¼ |
| McKess. & Rob. | 17 | 13 | 16 | 14¾ |
| Monsanto | 25⅛ | 20 | 22 | 23½ |
| Newport "A" | 47 | 42 | 43 | 42 |
| Proct. & Gamb. | 70⅜ | 63 | 67½ | 69¾ |
| Shell Union | 10¼ | 7⅜ | 9⅞ | 9 |
| Sher. Will. | 67 | 60½ | 65⅞ | 67 |
| Sinclair | 15⅞ | 10⅛ | 11⅞ | 13¾ |
| S. O. of Cal. | 51¾ | 45⅛ | 47⅛ | 48 |
| S. O. of Ind. | 38½ | 33½ | 35½ | 33⅝ |
| S. O. of N. J. | 52½ | 45¾ | 47⅜ | 48½ |
| S. O. of Ohio | 62½ | 49¾ | 56 | 54 |
| Swift & Co. | 30⅜ | 28⅛ | 28¾ | 29¾ |
| Union Carb. | 72 | 55½ | 59½ | 66⅛ |
| Westvaco | 28½ | 19⅞ | 25½ | 28½ |
| Wilson & Co. | 4 | 2½ | 3 | 3¼ |

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Consolidated profit of Monsanto Chemical Works, St. Louis, for the year 1930, after taxes and all other charges but before depreciation and research, was $2,083,688.42. After charging off $867,851.78 for depreciation and obsolescence and $452,833.11 for research the net totaled $763,003.53, or $1.78 per share, on 429,000 shares outstanding January 2, 1931. The 1929 earnings were $1,691,338, or $4.18 per share, on 404,253 shares outstanding January 2, 1930.

## Colgate-Palmolive-Peet Earnings

The Colgate-Palmolive-Peet Company has reported consolidated net income of $8,550,055 for the year ended December 31, 1930, after depreciation, interest and Federal taxes. This includes the operation of Kirkman Sons, Inc., which was acquired during the year. The net was equal to $3.76 a common share after preferred dividends including a full year's dividends on preferred stock issued for Kirkman Sons on October 1, 1930. The 1929 net was equal to $4.03 a common share, totaling $8,910,631.

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Gold Dust Corporation and Subsidiaries during 1929 earned net profit, after interest, depreciation, Federal taxes and other charges of $6,688,816, equal, after preferred dividends, to $3.51 a share on the common stock, compared with $7,586,963, or $4 a share, on the same amount of stock in 1929.

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Mathieson Alkali Works, Inc., reports for the year ended December 31, 1930, net income of $2,096,007, after depreciation, depletion and Federal taxes, equivalent, after dividend requirements on 7 per cent preferred stock, to $2.96 a share on 650,436 no par shares of common stock. This compares with $2,324,276 or $3.31 a share in 1929.

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The report of Lehn & Fink Products Company and subsidiaries for the year ended Dec. 31 shows net profit of $1,706,771 after depreciation, Federal taxes, etc., equivalent to $4.07 a share on 419,166 no-par shares of capital stock. This compares with $1,726,608, or $4.10 a share in 1929.

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## Glycerine Imports Lower in 1930

Imports of crude glycerine into United States during December, 1930, totaled 1,511,938 lbs., worth $86,967, as compared with 999,888 lbs., worth $58,043 in November. Imports of refined glycerine totaled 484,519 lbs., valued at $40,586, in December, as against 582,723 lbs., worth $50,118, in November, 1930. The following figures give in pounds the imports of glycerine into United States over a period of years:

| | Refined | Crude |
|---|---|---|
| 1923 | 585,792 | 14,548,660 |
| 1924 | 1,500,644 | 14,427,054 |
| 1925 | 2,059,565 | 19,248,695 |
| 1926 | 10,732,246 | 27,701,142 |
| 1927 | 8,268,071 | 14,784,615 |
| 1928 | 4,287,587 | 4,501,727 |
| 1929 | 5,493,421 | 14,488,676 |
| 1930 | 3,064,638 | 10,424,190 |

## Hold Hearings on Oil Tariff

(*From Page* 35)

encing depressions similar to his own. His statement that fish oil is used to make soaps was challenged by Daniel McIver of the Original Bradford Soap Works, who demanded to know what type of soap is so manufactured, and who declared he has heard of no fish oil soap other than that which is used as an insecticide. Mr. Morse was not in a position to amplify his statement, explaining that it is his understanding that this product is so used, but that he could not vouch for the fact. Reports on experiments made by the United States Bureau of Fisheries in the use of fish oil as an edible produced much discussion and while a technician of that department, J. R. Manning, admitted the possibility that the taste might not be all that would be desired, he insisted vitamins important to bone growth are assimilated through the use of fish oils. He declared frankly that, with the exception of cod oils, little call is had for the product from this field for human consumption.

### Opponents of Increases

HANDLING the argument in favor of the present tariff provisions was John B. Gordon, technical adviser and tariff expert for the Bureau of Raw Materials for American Vegetable Oils and Fat Industries, who introduced witnesses whose testimony was an emphatic denial that there is competition with domestic productions, and who declared that much of the work now being done with imported products cannot otherwise be executed. P. R. Crawford, president of the McKeesport Tin Plate Co., of McKeesport, Pa., spoke with a background of 40 years experience in tinplate manufacture, a field which employs 35,000 workers, told of experiments with substitutes for palm oil in tinplate production and declared that all had been failures. Since no palm oil is produced in the United States, foreign fields must be looked to, he explained. Tallow, cottonseed oil and other domestic products were among those tried, he testified. Of the 128,000 tons brought here annually, about 10 per cent. of the palm oil import is utilized in the tinplate industry, he estimated. As to the use of hydrogenated cottonseed oil for this work, he admitted lack of knowledge.

F. M. Barnes of Cincinnati, O., representing the American Laundry Soap Manufacturers, declared foreign products must be used in making soap because the domestic market does not produce sufficient quantities to meet demands. Palm oil is used extensively by those he represents, but rapeseed and perilla are not employed at all and coconut oil is too expensive, he asserted. After offering testimony corroborative of what had been said by Mr. Barnes, W. B. Chittenden of the American Laundry Soap Manufacturers, and the Colgate-Palmolive-Peet Co., stated that a duty on palm oil would seriously injure the soap industry and cut down on the use of rosin, domestically produced, and use as another soap ingredient. The cottonseed oil production of the United States is not great enough to provide for the needs of the edible field, disregarding the soap industry, he charged.

Representing the Vacuum Oil Co., said to be the largest user of rapeseed oil, A. T. Foster stressed the need of this import for lubricants. Of the 2,500,000 gallons imported in 1929, 1,500,000 to 1,800,000 went into the making of lubricating oils, he told the commission. The requirement for copra, coconut, palm and palm-kernel oils in making laundry soap, and of perilla for paints was discussed by Henry A. Gardner of the Institute of Paint and Varnish Research, and by D. W. Corbin of the Laundrymen's National Association. Mr. McIver, representing makers of textile soaps, declared no substitute can be found for palm oil in fulling textiles.

Because of a misunderstanding, none of the interested parties came to the hearing prepared to submit data on costs of production and transportation, which was the subject of main interest to the commission, but all agreed to include this discussion in briefs to be filed. In the meantime, the commission will take under advisement a request for a hearing at a later date to allow rebuttal of such declarations as may be included in these briefs.

Copra, palm, rapeseed and perilla oils are now admitted to the country duty free; a duty of two cents a pound is levied on coconut oil, one cent on palm kernel oil, three cents on sesame, and $17 a ton on whale oil.

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## Soap Industry Leading Fat Consumer

(*From Page* 31)

In some of the headings only the predominant products of the industry are mentioned. For instance, "Lard substitutes" includes mayonnaise, salad oils and other similar food products except oleomargarine, which is shown separately as reported by the Bureau of Internal Revenue; "Paint and varnish," enamels, lead grinding, etc.; "Linoleum and oil cloth," other coated fabrics; and "Textiles," the operations of some of the producers of special oils and soaps used in that industry.

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A cargo of 35,000 barrels of whale oil was recently unloaded at Philadelphia from the Norwegian transport "Busen."

# CHICAGO NEWS

Plans for the first annual Spring Frolic given by the Chicago Drug and Chemical Association are now nearing maturity. William O'Neill, of Emerson Drug Company, chairman of the entertainment committee, has arranged to have the affair take place in the banquet room of the Lake Shore Athletic Club on a date not yet definitely set during the fourth week in April. The banquet to be given without cost to the members will be an elaborate affair. Contrary to the custom followed at the past fall banquets of this association, ladies will be invited and it is expected that virtually the entire membership will be represented. Assisting Mr. O'Neill on the committee will be O. M. Krembs, vice-chairman, Chris Christensen, Charles Curtis, E. G. Drach, William B. Erb, E. P. Gibney, H. L. Hopp, H. E. Lancaster, L. A. Lanigan, William Lowenstein, O. H. Raschke, J. P. Sullivan, Joseph A. Gauer, F. L. McCartney and A. P. Stepan. Dinner will be served and will be followed by dancing and special novelty entertainment features.

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The Chicago Perfumery, Soap and Extract Association held its first March meeting on Wednesday, the fourth, at the Elks Club in the form of an evening dinner. The members have responded encouragingly to the occasional evening meetings and many regard them with particular favor. They allow the guests a greater length of time for companionship, for the dinner is always followed by lively bowling session. Ray A. Morris, with his committee, consisting of Paul H. Pettit, A. M. Burgh, H. Schwenneke, and A. J. Anderson, has done much to restore this pastime to favor in the Association. Bridge parties and committee meetings also follow the general business session. The entertainment committee, headed by William J. Mitchell, and composed of Russell G. Brown, Joseph A. Gauer, Joseph De Lorme, David A. Day, and A. G. Schneider, has planned the annual spring dinner dance for approximately the middle of May. The date will be placed somewhat later this year in order not to have it fall too close to the similar affair of the Drug and Chemical Association. A. C. Drury, chairman of the golf committee, promises an early announcement of the tournament dates for 1931.

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The finishing touches to what might well be classified as a true detective story were added to an unusual case a short time ago. On March 26th, 1930, the Chicago office of William H. Schutte & Co., representing P. R. Dreyer, Inc., was robbed. Since that time Mr. Schutte has been untiring in his efforts to discover some trace of the marauders. In this he had the cordial co-operation of all the Chicago cosmetic, oil and allied trade dealers and manufacturers, who kept a diligent watch for any offered sale of the stolen articles. The reward of patience was finally gained when one of the thieves was apprehended while attempting to dispose of a bottle of P. R. Dreyer's essential oil. A hiding place was revealed and one-third of the stolen goods has already been restored. It is expected that only a short time will elapse before the balance is recovered or accounted for.

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Martin B. Vance, of the Chicago office of Givaudan-Delawanna, Inc., was recently married to Miss Ann Marie Soper, also of Chicago.

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Joseph De Lorme, of Riviera Products Co., has been appointed representative for the Oil States Petroleum Company, New York, and will handle the midwest sale of that company's petrolatums, mineral oils and paraffin waxes.

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John Grommes, Jr., recently opened a Chicago office for Flora Aromatics Company, New York, at 412 Orleans Street.

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Exhibitors at the sixty-seventh annual meeting of the Chicago Dental Society, held at the Stevens Hotel on February 2 to 5, included Colgate-Palmolive-Peet Co., Kolynos Co., National Aniline & Chemical Co., Pepsodent Co., Bristol-Myers Co., August E. Drucker & Co., Winthrop Chemical Co., and Abbott Laboratories.

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Early 1931 venturers out of Chicago have included A. J. Dedrick, of Edward T. Beiser Co., Joseph A. Gauer, of Fritzsche Bros., Inc., and John H. Neumann, of Neumann-Buslee & Wolfe, Inc.

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H. C. Ryland, Inc., essential oils, New York, announces the removal of the Chicago branch office to 220 South State Street. L. J. Anderson is in charge.

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Link-Belt Company, Indianapolis, announces that the following distributors of Link-Belt automotive timing chains have been appointed for their respective territories: Automotive Bearings & Equipment Co., 713-716 Sycamore Street, Cincinnati, Ohio; Cartier & Bulman, 2613 Baker Ave., Bell, California; Taft Auto Specialty Co., 305 Center Street, Taft, California; Roper Auto Part Co., 2554 Randolph St., Hunting Park, Calif.

# PERSONAL AND IMPERSONAL

Dubois Soap Company recently established a research laboratory under the direction of Dr. Herman Heckel, a graduate of the University of Illinois. He has recently been associated with the Mellon Institute of Research (Industrial Research) at Pittsburgh; the Twitchell Process Co. of Cincinnati; and the Marsene Transparent Paper Co. of Gary, Indiana. In the new department it is hoped to bring about through research, new improvements and developments in cleaning materials and cleaning material problems.

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Announcement was made February 26 that the Royal Nassau Soap factory, 1115 University Ave., St. Paul, would open March 1st. A. Lincoln Nassau, formerly of Schunemans and Mannheimers, leading local department store, has leased the former Royal Lemon Soap factory which has been closed for about 10 months due to the illness of its former owner. Mr. Nassau for many years has been active in both the production and merchandising of soaps. He was with the B. T. Babbitt Co., the Palmolive Co., and the Skidoo Soap Co., which he sold out in 1926. Alterations were made at the factory to have it in readiness for the resumption of production. An intensive advertising program of national scope is contemplated, with retail outlets established through drug, department and general stores. Some distribution is planned through beauty shops.

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It was incorrectly stated in the February issue of *Soap* that Procter & Gamble Co. plan to erect a fourteen story building in Chicago on the old Michigan Boulevard site of the James S. Kirk & Co.'s plant. Officials of the company state that there is no truth in this statement.

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Alvah E. Peterson has recently been made general supervisor of the Boston district by Procter & Gamble Co. It was in this district that he first joined the company as a retail salesman in July, 1923.

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A concern marketing a soap of domestic manufacture has recently signed a stipulation with the Federal Trade Commission, agreeing not to designate this product as "Imported." It has also agreed to refrain from use of the words, "Buttermilk," "Peroxide" and "Witch-Hazel" to designate soaps not consisting in substantial part of the products indicated.

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The team representing Colgate-Palmolive-Peet Co. was in first place in league standing in the Wholesale Drug Trade Bowling Association Tournament on February 20, with 23 victories and 13 defeats. The E. R. Squibb & Sons team continues to hold the high score record for the season with a mark of 1,009, including handicap.

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Burton T. Bush recently resigned his position as assistant sales manager of the aromatic chemical division of Newport Chemical Works. His future plans have not as yet been announced. Mr. Bush is a familiar figure in the essential oil and aromatic industry, having been connected with this trade for many years.

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Adams Wax Products Mfg. Co., St. Paul, has recently introduced a new product called Waxoap for which they claim many of the good points of soap and wax. They state that wax is substituted for the usual oil or fat in the manufacture of the product, and that this eliminates the fatty residue left by soap, a coating of wax being left instead.

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Mr. and Mrs. David A. Bennett, of Albert Verley, Inc., Chicago, American representatives of Albert Verley, French manufacturers of perfumery materials, returned to Chicago late last month following a vacation of several weeks in the far west.

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Frederick K. Morrow, of Gold Dust Corp., was recently elected president of Ward Baking Co., and George K. Morrow, chairman of the board of the Gold Dust Corp., was given the same position with the Ward Company.

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Edward V. Killeen was recently elected president of George Lueders & Co., essential oils, New York, after forty years of service with the company. George Lueders, the former president, becomes chairman of the board. Mr. Killeen had been vice-president of the company since 1915 and secretary since its incorporation in 1906.

S. Bayard Colgate, son of the late Sidney M. Colgate, has recently been admitted to the firm of Spencer Trask & Co., New York investment bankers, as a special partner.

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Van Raalte Co., New York, recently brought out a new cold water soap for use in washing silk and rayon garments.

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A. M. Emerson, agent in the Oakland and east bay territory for Los Angeles Soap Co., recently retired after twenty-five years, and has been succeeded by J. C. Ralph. H. F. Archambault now has the Sacramento territory formerly worked by Ralph.

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Newport Chemical Works recently moved its aromatics and fine chemicals division headquarters from 260 West Broadway, New York, to the main plant of the company at Passaic, N. J. A New York branch office will still be operated, but it is requested that correspondence be addressed to Passaic. D. C. Scott has been put in charge of fine chemicals and Giles Low is in charge of aromatic chemicals.

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The creditors of Kolo Products Co. have recently been asked to approve a plan of operation which involves turning over the exclusive rights to manufacture under its patents to a new corporation. Royalty payments of at least $1,000 a month would be paid to Kolo and would go to satisfy claims of creditors. The company, located in New York, manufactures cleaning compounds. It has encountered financial difficulties which leave it with liabilities of $130,000 and little more than patent rights as assets.

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T. V. DuBois, president of DuBois Soap Co., Cincinnati, left by plane for the Pacific Coast on February 24. He will open up branch offices and establish representation in Los Angeles, San Francisco, and Seattle. This is in addition to branches which have just been opened in Houston and Dallas, Texas, and will now give coast to coast distribution and representation for DuBois Soap products.

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Anchor Cap and Closure Corp. is mailing to the trade a folder describing its new molded caps, together with reprints of the Anchor advertisement which appeared in the February issue of *Soap*. One of the principal features of the new cap is a liner retaining ledge which holds the liner in place in the cap and yet at the same time allows it to rotate freely.

R. A. Jones & Co., Cincinnati, have issued a catalogue describing their new and improved models of automatic soap presses. Among the various presses offered is one equipped with the new double stroke toggle action pressing mechanism. The long pressure on the cake obtained through use of the toggle action and the double stroke are said to combine to produce a highly finished cake on which the lettering and design are brought out clearly and in perfect detail.

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The large demand for Sopozon dispensers in the Dominion of Canada has compelled Bobrick Manufacturing Corporation to start manufacturing liquid and powdered soap dispensers at 750 Belair Street, Montreal. The U. S. sales policy of selling only to soap manufacturers and jobbers will be continued in Canada. Sales for the Eastern part of Canada will be directed from New York and from Los Angeles for the western section of Canada.

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Lavo Company of America, Milwaukee, has recently been refused permission to register as a trade mark for cleaning compounds the word "Magnetic," together with a picture of a horse shoe magnet. The U. S. Patent Office based its decision on the previous registration of four similar marks.

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Innis, Speiden & Co., New York, recently elected G. S. Hamilton to the board of directors. Three new vice-presidents were designated by the board as follows: H. G. MacKelcan, in charge of sales and assistant secretary; C. C. Wickstead, in charge of personnel and assistant treasurer; C. L. Speiden, in charge of foreign affairs and secretary.

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The board of directors of Monsanto Chemical Works, St. Louis, at their meeting on February 24th elected Lynn A. Watt as assistant vice president in charge of commercial research and technical service. Mr. Watt has been associated with Monsanto for the past eleven years and will continue his work with development and technical problems.

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Clinton S. Lutkins recently rejoined Allied Chemical & Dye Corp. as director and executive vice-president after an absence of about a year. He has had a long experience with this organization, having at various times been connected with General Chemical Co., Barrett Co., National Aniline & Chemical Co., Semet Solvay Co. and Solvay Process Co.

# SOAP CHEMISTS' SECTION

(Official Publication, SOAP SECTION, American Oil Chemists' Society)

## Oil Chemists to Meet May 14-15

PRELIMINARY plans are in the course of formulation for the Twenty-second Annual Meeting of The American Oil Chemists' Society. The annual convention of the National Cottonseed Products Association will be held at the Roosevelt Hotel, New Orleans, La., on May 18, 19 and 20th.

The present tentative plans contemplate holding the Oil Chemists' Society meeting on May 14 and 15th, the Thursday and Friday preceding the Cottonseed Products Association meeting.

President W. H. Irwin, of the Oil Chemists' Society, is already well advanced with plans for a most interesting array of scientific papers for presentation at the meeting. Headquarters will undoubtedly be at the Hotel Roosevelt, where so many previous meetings have been held.

Entertainment features will include the Annual Banquet and the Golf Tournament. N. C. Hamner, chairman of the Golf Committee, has marshaled his cohorts and guarantees big doings and important prizes. He writes that some of the prizes are already in hand, but that the doors are still open to those generous friends of the oil chemists who desire to contribute further prizes for the tournament. Chairman Hamner urges all members to bring their golf bags and clubs, and their handicaps, (*actual*, not hopeful).

The work of the American Oil Chemists' Society during the past year has shown splendid progress under the able leadership of President Irwin, and every member is urged to attend the Annual Meeting in order to derive personal benefit from the committee reports and scientific papers which will be presented, as well as to spend a few enjoyable days in the renewal of friendships in beautiful New Orleans at its best season.

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ELEMENTS OF CHEMICAL ENGINEERING: By W. L. Badger and W. L. McCabe, 8vo. 625 plus xvii pages. New York, McGraw-Hill Book Company. $5.00. Messrs. Badger and McCabe, well-known chemical engineers and respectively Professor and Assistant Professor of the subject at the University of Michigan, have here contributed an outstanding textbook to the rather meager literature of chemical engineering. The authors have approached their subject with that spirit of respect for order and related development which is such a necessary qualification of the chemical engineer. In recognizing that the modern practice of chemical engineering rests upon a thorough understanding of the basic Unit Operations, this work is devoted chiefly to a thorough analysis of these operations, as comprised in flow of fluids, flow of heat, evaporation, air conditioning, drying, distillation, gas absorption, extraction, crystallization, filtration, mixing, crushing and grinding, and size separation. An interesting addition is a chapter on the engineering considerations covering the design and application of weighing machinery and conveying machinery. This textbook offers such an attractive blend of underlying theory and practical methods of application that it should serve the graduate practicing engineer as well as it undoubtedly will the student.

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INDUSTRIAL RESEARCH LABORATORIES OF THE UNITED STATES: (Including Consulting Research Laboratories) Bulletin Number 81 of the National Research Council. Fourth Edition, Washington, D. C. 1931. 266 pages. $2.00. This latest revision of the Directory of Research Laboratories appears complete and up to date. There are to be found within its covers an alphabetical list of about 1625 laboratories, a list of more than 1900 directors of research, a geographical index and a subject index. As a reference list it should be of value to all who are interested in research in pure or applied science.

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Brucine alkaloid has been added to the list of materials permitted for use in the denaturing of vegetable oils by the Bureau of Customs. It is to be used in the proportion of one-half ounce to the gallon of olive, palm kernel, rapeseed, sunflower and sesame oils.

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A dust explosion in the flaxseed elevator of Spencer Kellogg and Sons, Inc., at Buffalo on February 18, caused damage exceeding $15,000.

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Sulfonated oils are said to possess practical advantages over soap as emulsifying agents because of the greater stability and uniformity of the former, their greater stability in acids, alkalies and hard water and their greater powers of dispersion and penetration. *Am. Silk. J.* 49, No. 64-6 (1930.)

# ON PRODUCTS AND PROCESSES

In a study of the velocity of reaction in the saponification of fats, the influence of the concentration of soda is said to be proportional to the degree of concentration, for with thirty per cent lye saponification is about twice as rapid as with ten per cent lye. The more diluted lyes are said to be preferable, however, because of the increased contact surface between the weaker lye of greater volume and the fats. *Chem. et Ind.* July, 1930.

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Soaps produced by pressure saponification are said to be subject to the disadvantages of the necessity for the use of highly purified stocks, of high installation costs, loss of glycerol, dark colored products due to the attacking of the iron of the autoclave by the fatty acids, and the danger of foaming over. There are differences of opinion as to whether the disadvantages are outweighed by the gain in speed of production, the completeness of saponification, and the fuel-saving advantages connected with the process: *Algemain. Ol. Fett.* 27,24 (1930).

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The essential factors for permanency of odor and color in soap are held to be: a neutral soap body, purity of the perfuming agents, proper fixative materials and laboratory tests for keeping quality. Electrolytes, sodium chloride, sodium sulfate, and weak organic acids are said to be without action on perfumes, while it is claimed that benzoic acid will prevent rancidity. Free alkali or soda ash are considered dangerous, especially toward eugenol, vanillin, helitoropin, coumarin and the like, in regard to both color and perfume. *Seifensieder-Ztg.* 57,763-4 (1930).

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In the preparation of a patented soap powder, a semi-plastic, moisture-containing soap stock is divided into pieces of large surface areas relative to their mass (as by extrusion to form strips), and these pieces are embedded in a dehydrated powdered alkali such as soda ash, having an affinity for the moisture in the soap stock and the mixture is aged to permit the alkali to absorb a substantial proportion of the moisture and render the soap stock more brittle. It is then reduced to the desired degree of fineness. U. S. Pat. No. 1,785,054.

A washing and bleaching agent capable of exerting its bleaching action in the presence of water at ordinary temperatures may be prepared by incorporating with soap flakes, powder or bars, varying amounts of a double salt of trisodium phosphate and sodium hypochlorite with or without soda ash and other usual soap powder ingredients. If kept substantially dry, the double salt is stable for at least several months even in the presence of the organic matter of the soap. Brit. Pat. No. 288,654.

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The clouding point of a soap solution has been defined as that temperature at which a soap solution containing three per cent of fatty acids combined with alkali becomes turbid. In washing textiles, if the clouding point lies above the temperature of the washing water, soap is precipitated on the fibres and interferes with subsequent dyeing or printing. Apparatus for determining the clouding point comprises a jacketed beaker fitted with a thermometer and stirrer, and placed in a vessel filled with hot water. The jacket has a narrow vertical slit in one side and a slit three times as wide with a narrow strip down the middle on the opposite side. Soap solution heated above its clouding point is poured into the beaker and viewed through the narrow slit, illumination being provided behind the wider slit. The temperature at which cloudiness first begins to appear is taken as the clouding point *Chem.-Ztg.* 49, 1012 (1930).

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In spray-drying soap, particles of an atomized fluid soap solution are subjected to the drying effect of a heated air current and the particles are separated by gravity from the heated air current at a predetermined stage of the drying process and cooled by falling through a current of suitably conditioned air. U. S. Pat. No. 1,779,-516.

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A new detergent composition is prepared by dispersing a volatile hydrocarbon material such as gasoline in an aqueous medium with a water-soluble saponaceous emulsifying agent to form a substantially permanent emulsion with the hydrocarbon as the dispersed phase. The product is homogenized and has viscosity suitable for extrusion from a tube. U. S. Pat. No. 1,786,249.

# CONTRACTS AWARDED

Geo. E. Marsh Co. was recently awarded the contract for 598,000 lbs. laundry soap for Brooklyn army quartermaster at 3.49c. Armour & Co. awarded 20,040 lbs. at 3.55c. Day & Frick awarded 72,000 11-oz. cakes scouring soap at 3.1c. Newell-Gutradt Co. awarded 34,800 lbs. white floating soap at 2.35c. Globe Chemical Co. awarded 100 gals. liquid soap at 46c. John Opitz, Inc., awarded 12 5-oz. cans of roach paste at 16 2-3. Leeno Products Co. awarded 20 gals. carbon tetrachloride at $1.09.

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Armour & Co. was recently awarded the contract for 12,336 cans scouring powder for Brooklyn army quartermaster at 2.65c. Geo. E. Marsh Co. awarded 4,600 bars of laundry soap at 3.49c. Procter & Gamble Distributing Co. awarded 384 lbs. Soap powder at 3.6c and 336 packages of soap powder at 3.61c. Swift & Co. awarded 144 cans cleanser at 3.27c and 144 packages soap powder at 9.67c. Crystal Soap & Chemical Co. awarded 72 cans of soap powder at 15c. Windsor Soap Co. awarded 1,000 cakes hand soap at 2.41c.

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Massasoit Mfg. Co., Fall River, was recently awarded the contract for 24,000 cotton mops for U. S. Marine Corps, Philadelphia, at a price of 17.7c.

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Bids entered on five barrels of metal cleaner for Washington U. S. M. C. in a recent bidding included the following: Walter W. Miller Co., Indianapolis, 3.5c; J. B. Ford Sales Co., Wyandotte, Mich., 7.48c; Oakite Products, Inc., New York, 12.1c.

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American Tar Products Co., Birmingham, Ala., was recently awarded the contract for 10,000 gals. creosote oil for Mobile, Ala., engineer at $1,150 f. o. b. shipping point.

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Armour & Co., Chicago, was recently awarded the contract for 3,120 lbs. laundry soap for Fairfield air depot at 3.314c in a Chicago quartermaster bidding. The same company was also awarded the following amounts: 5,100 lbs., Fort Hayes, 3.33c; 15,640 lbs., Fort Harrison, 3.29c; 1,800 lbs., Fort Brady, 3.423c; 3,000 lbs., Selfridge Field, 3.314; 2,400 lbs., Selfridge Field, 3.277c; 4200 lbs., Fort Wayne, 3.314c; 4,800 lbs., Chanute Field, 3.246c; 600 lbs. Rock Island, 3.277c; 9,000 lbs., Fort Sheridan, 3.163c; 1,260 lbs., Camp McCoy, 3.28c; 3,420 lbs., Fort Des Moines, 3.327c; 9,000 lbs., Fort Snelling, 3.373c. Iowa Soap Co., Burlington, Iowa, was awarded 4,020 lbs. laundry soap for Fort Meade at 3.6c and 1,500 lbs. for Fort Lincoln at 3.6c.

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Windsor Soap Co., Washington, in a recent Chicago Quartermaster bidding, was awarded the contract for 1,100 cakes white floating soap for Rock Island at 2.35c, and 1,500 cakes for Chanute field at 2.35c. United States Soap Co., Cincinnati, was awarded 1,200 cakes grit soap for Fort Benjamin Harrison at 3c and 400 for Chanute field at 3c. Hunnewell Soap Co., Cincinnati, was awarded 200 cakes of grit soap for Fort Brady at 3c. Day & Frick Soap Works, Chicago, was awarded 100 cakes of grit soap for Camp McCoy at 3.25c. Franklin MacVeagh & Co., Chicago, was awarded 100 cakes for Chicago at 3.21c and Gold Dust Corp., New York, was awarded 1,200 cakes for Fort Sheridan at 3c.

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## Classification of Oils and Fats

(*From Page* 34)

it finds its most profitable field of usage in the edible field. Now, it so happens that the drying field of usage and the edible field of usage are the two highest priced fields of usage to which oils and fats can be put in America today. If the prices of the oils and fats in the drying field and the edible field are checked over, they will be found to be the highest priced oils and fats in our markets today.

Thus we see that the producers of oils and fats in the United States have absolute control of the two best paying classifications of oils and fats. It would do them no good if a tariff policy were inaugurated to interfere with the non-drying industrial group, the cheaper field of usage. They do not produce any of these oils, and aside from the fact that there is a great deficiency in the United States of these non-drying industrial oils, for the most part they fulfill a specific function which would require their importation even if there were a duty upon them.

# RECORD OF TRADE-MARKS

The following trade-marks were published in the February issues of the *Official Gazette* of the United States Patent Office in compliance with Section 6 of the Act of September 20, 1905, as amended March 2, 1907. Notice of opposition must be filed within thirty days of publication. As provided by Section 14, fee of ten dollars must accompany each notice of opposition.

## Trade Marks Filed

**American Gentleman**—This in solid letters describing shaving soap. Filed by McKesson & Robbins, Inc., Bridgeport, Conn., November 29, 1929. Claims use since September 1, 1929.

**Klenzum**—This in outline letters describing cleaning preparation. Filed by United Sisters Mail Order Co., Albany, October 9, 1930. Claims use since August 5, 1929.

**Piney Solvent**—This in solid letters with pine tree, describing solvent cleanser. Filed by Universal Solvent Products Co., New York, November 8, 1930. Claims use since August 10, 1929.

**Trymore**—This in solid letters describing shaving cream. Filed by Trymore Laboratories, New York, December 15, 1930. Claims use since August 20, 1930.

**Alabaster**—This in outline letters describing soap in comminuted form. Filed by Procter & Gamble Co., Cincinnati, December 18, 1930. Claims use since November 1, 1930.

**Scare Moth**—This in solid letters describing fumigant and deodorant. Filed by Xtermx, Inc., Chicago, May 29, 1930. Claims use since February 10, 1929.

**Fly-Rid**—This in outline letters describing insecticide. Filed by Humane Remedy Co., Des Moines, August 22, 1930. Claims use since October 30, 1926.

**Sue-E**—This on reverse plate with sketch of girl, describing antiseptic and cleansing powder Filed by Woodberry Soap Co., Cincinnati, November 7, 1930. Claims use since October 13, 1930.

**Cedarizer**—This in solid letters describing insecticide. Filed by Ajel Mfg. Co., Oakland, Cal., November 20, 1930. Claims use since January 1, 1930.

**Citro-Spray**—This in solid letters describing insecticide. Filed by Sherwin-Williams Co., Cleveland, November 20, 1930. Claims use since September 1, 1930.

**Zero-Jel**—This in solid letters describing antiseptics and germicides. Filed by Dorroy Corp., New York, December 2, 1930. Claims use since November 21, 1930.

**Kwick**—This in shaded letters with jewel as background, describing cleaner and polish. Filed by Kwick Products Co., Baltimore, December 9, 1929. Claims use since November 1, 1929.

**Cornwall**—This in solid letters with head of eagle, describing metal polish. Filed by Minn S. Cornell, Jr., Middletown, Conn., December 12, 1930. Claims use since November 28, 1930.

**Knob**—This in solid letters describing toilet soap. Filed by Charles A. Crary, Wyoming, Cincinnati, Ohio, December 29, 1930. Claims use since May, 1930.

**Knobbier**—This in solid letters describing toilet soap. Filed by Charles A. Crary, Wyoming, Cincinnati, Ohio, December 29, 1930. Claims use since May, 1930.

**Knobby**—This in solid letters describing toilet soap. Filed by Charles A. Crary, Wyoming, Cincinnati, Ohio, December 29, 1930. Claims use since May, 1930.

**Sketch of woman and two urns,** describing soap. Filed by Dorothy Gray, Bloomfield, N. J., December 30, 1930. Claims use since June 20, 1928.

**X 100**—This in solid letters describing insecticide. Filed by Sani Chemical Co., Chicago, August 14, 1930. Claims use since June 15, 1930.

**Ero**—This in outline letters describing cleaning compound. Filed by Athens Distributing Co., Athens, Ga., December 26, 1930. Claims use since February 1, 1930.

**Modene**—This in solid letters describing cleaning compound. Filed by Frank Bownes Co., Chelsea, Mass., January 6, 1931. Claims use since January 1, 1929.

**Mackie's**—This in solid letters with representation of girl on reverse plate, describing shampoo. Filed by Mackie Pine Oil Specialty Co., Covington, La., May 31, 1930. Claims use since April 17, 1928.

**Neutra-Lac**—This in solid letters describing tooth paste. Filed by Commodore Brush Co., New York, October 29, 1930. Claims use since September 1, 1930.

**Triple F**—This in outline letters describing insecticide. Filed by USL Battery Corp., Niagara Falls, N. Y., December 27, 1930. Claims use since October 31, 1930.

**Outdoor Girl**—This in tooled letters describing cream soaps. Filed by Crystal Chemical Co., New York, July 11, 1929. Claims use since March 1, 1929.

**Ladies Favorite**—This in solid letters describing soap, soap chips and soap powders. Filed by Hellen & Perrin, Pittsburgh, Pa., December 9, 1930. Claims use since September 16, 1930.

**Klenit**—This in tooled letters describing pumice soap. Filed by Klenit Corp., Winner, S. Dak., January 8, 1931. Claims use since March 6, 1929.

**I-X-Pel**—This in shaded letters describing germicide and disinfectant. Filed by A. V. Altmann, Jr., J. H. Gibbs, and R. W. Edwards, Syracuse, N. Y., December 6, 1930. Claims use since September 1, 1930.

**Pepsodent**—This on reverse plate on carton, describing antiseptic. Filed by Pepsodent Co., Chicago, December 23, 1930. Claims use since October 23, 1929.

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## Trade Marks Granted

**279,998.** Tooth Paste. Anti-Erozon Laboratories, Inc., Miami. Filed August 7, 1930. Serial No. 304,305. Published November 25, 1930. Class 6.

**279,999.** Antiseptic Liquids. Frank W. Barber Co., Stockton, Calif. Filed May 24, 1930. Serial No. 301,149. Published November 25, 1930. Class 6.

**280,015.** Hand Soap. Soprim Soap Co., Minneapolis. Filed October 15, 1930. Serial No. 306,793. Published November 25, 1930. Class 4.

**280,016.** Shaving Creams. Comfort Manufacturing Co., Chicago. Filed October 15, 1930. Serial No. 306,768. Published November 25, 1930. Class 4.

**280,026.** Automobile Polish. Harrison & Co., Haverhill, Mass. Filed October 2, 1930. Serial No. 306,334. Published December 2, 1930. Class 16.

**280,039.** Cleaner. Tropical Paint and Oil Co., Cleveland. Filed July 11, 1930. Serial No. 303,406. Published November 18, 1930. Class 4.

**280,047.** Soap. Colgate-Palmolive-Peet Co., Chicago. Filed October 9, 1930. Serial No. 306,557. Published November 25, 1930. Class 4.

**280,077** Polish. Dan-D-Shyne Polish Co., Minneapolis. Filed September 30, 1930. Serial No. 306,233. Published November 25, 1930. Class 16.

**280,081.** Cleansing Compound. International Agricultural Corp., New York. Filed September

(*Turn to Page* 115)

# New Patents

*Conducted by*

**Lancaster, Allwine & Rommel**

*Registered Attorneys*

PATENT AND TRADE-MARK CAUSES
402 Ouray Building, Washington, D. C.

**Complete copies of any patents or trade-mark registrations reported below may be obtained by sending 25c for each copy desired to Lancaster, Allwine and Rommel. Any inquiries relating to Patent or Trade-mark Law will also be freely answered by these attorneys.**

**No. 1,787,660,** Soap Cake, Patented January 6, 1931, by Bertha E. Blakeley, Norwich, New York. A small cake of soap having an elastic loop attached thereto, the loop having one member extending across one face of the cake in position to be elastically engaged by one of the fingers of the hand and having its other member anchored in the body of the cake, so that the cake may be held in the palm of the hand without grasping it by the fingers, thereby leaving the fingers free to be used for other purposes.

**No. 1,788,848,** Process of Bleaching Soap, Patented January 13, 1931, by Charles Frank Schumaker, Syracuse, New York, assignor to The Mathieson Alkali Works, Inc., New York, N. Y., a Corporation of Virginia. The process of bleaching soap which comprises subjecting the soap to a milling operation in intimate admixture with solutions of sodium hypochlorite and formaldehyde.

**No. 1,789,565,** Insecticide, Patented January 20, 1931, by Albert P. Sachs, New York, N. Y., assignor to the Larvex Corporation, New York, N. Y., a Corporation of New York. A composition for moth-proofing textile materials, composed of sodium sulphate, sodium fluoride and a bitter extract in solution.

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Stocks of crude cottonseed oil on hand in United States on January 31, 1931, totaled 127,739,441 lbs., as compared with 126,604,977 lbs. on the same date last year. Stocks of refined oil were 461,775,884 lbs. on January 31, 1931, as against 465,433,221 lbs. on the corresponding date in 1929.

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Sylvania Industrial Corp., New York, recently announced new reduced prices on Sylphrap. Their new Fredericksburg, Va., plant is now in full production.

*Market Report on*

# ESSENTIAL OILS AND AROMATICS

(*As of March* 5, 1931)

NEW YORK—the general tone of the market for essential oils and aromatics continued to be downward throughout the recent period. Bergamot oil registered the most severe drop due to the failure of the Italian government's stabilization plan to exert any strengthening effect on the market. Lemon and orange oils also dropped off. Peppermint and spearmint were likewise weaker again. Anise dropped another few cents as replacements kept coming in. The situation on citronella was not very clearly defined. Early in the month both Java and Ceylon oils dropped in price. Later in the period it was reported in some quarters that Java prices had advanced materially. However in other quarters the previous reductions still held. One of the prominent features in the general list was the sharp advance in quotations on wormwood which came as a result of exhaustion of stocks.

### Oil Anise

Sellers again shaded quotations on oil anise during the period as they continued to dispose of their higher priced stocks. Replacements are now coming through without difficulty and the market is not particularly firm even at 48c.

### Oil Bergamot

Sharp reductions in quotations on bergamot oil in the primary markets were followed shortly after by similar reductions in the domestic trade. The collapse abroad apparently came as a result of realization that the attempt of the Italian government to stabilize the bergamot oil industry and raise prices and quality had failed. Quotations dropped off to as low as $2.00 a pound in some quarters, ranging up to $2.50 according to quality.

### Oil Citronella

Java and Ceylon oil were both weak in the early weeks of the recent period, but toward the close a considerable advance was reported in Java oil in some quarters. Prices as high as 54c a pound were again quoted on this oil as it was reported that consumption was picking up while suppliers were quoting higher prices in producing areas.

However other dealers in the New York market continued to offer Java oil as low as 47c pound.

OIL GERANIUM

This oil continued in fairly easy positions with no quotable changes in price.

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Van Dyk & Co., essential oils and aromatic chemicals, New York, moved its offices from 6 Platt Street to 50 West 17th Street on February 25. The new telephone number is Watkins 9-6246.

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The Twentieth annual meeting of the American Drug Manufacturers Association will be held at Virginia Beach, Va., May 4th to 7th. Among the items of particular interest on the program is a talk on radio and moving picture advertising by R. D. Kein of E. R. Squibb & Sons.

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William A. Poucher, author of "Perfumes, Cosmetics & Soaps," has disposed of his consulting business in London and is now a member of the technical staff of Yardley & Co., Ltd., London.

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Irving Feinberg is to be president and treasurer of United Chemical & Drug Corp., New York, formation of which was announced in the last issue of *Soap*. Percy E. Anderson will be vice-president, H. J. Pollinger, secretary, and Jacob Simon, assistant treasurer. The new concern is a Connecticut corporation with authorized capital stock of $600,000. R. Hillier's Sons Corp. failed to ratify the terms of sale to United and so will not be a part of the new concern as previously reported. The Hilliers' offices have been moved to 198 Broadway.

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## Vanilla Soap Perfume

A vanilla type odor for soap using vanillin and coumarin has some popularity in Europe and other places, according to the *British Soap Manufacturer*, but has a drawback in that vanillin causes quick discoloration in white toilet soaps. Where the vanilla character has been desired, coumarin has been used chiefly. For colored soaps—and very probably for liquid soaps—vanillin is satisfactory. A vanilla perfume of the following formula is suggested: Clove oil, 20 parts; cedarwood oil, 60 parts; lavender oil, 100 parts; geranium oil, 50 parts; palmarosa oil, 90 parts; safrol, 60 parts; coumarin, 20 parts; vanillin, 200 parts; heliotropin, 30 parts; styrax, 80 parts; balsam peru, 80 parts; tincture benzoin, 110 parts. From one to two per cent is used in soap.

*Market Report on*

# SOAP AND DISINFECTANT CHEMICALS

(*As of March* 5, 1931)

NEW YORK—The market for soap and disinfectant chemicals took on a much steadier tone during the recent period. The new contract prices on alkalis were well maintained and producers reported satisfactory withdrawals on contracts. The coal tar situation also seemed to be a little more hopeful from the standpoint of sellers, as demand continued to pick up slowly. Among the sellers of glycerine there was a feeling of greater stability and any suggestion of weakening quotations was lacking. The naval stores market also shared in the slightly optimistic tone of the recent month, with quotations advancing irregularly on several grades. The general opinion expressed in most quarters was that bottom had been reached on a number of items, and that while there might be minor fluctuations for the next few months the general outlook both for prices and consumption was upward.

### ALKALIS

A slight increase in withdrawals of soda ash and caustic soda was reported during the recent period by producers. In the spot market prices held firm at recently established levels.

### GLYCERINE

The glycerine market held fairly steady during the period just concluded with prices unchanged and a satisfactory volume of business being done when compared with recent months.

### NAVAL STORES

Rosin quotations moved upward slightly during the recent period. There was a fair increase in interest although neither domestic nor foreign takings increased substantially. The condition of stocks brought a little stronger sentiment as decreased arrivals created a firmer technical position when compared to the situation a year ago. If production continues to decrease it will not be

long before higher prices will be seen. The closing schedule was: Grade B, $4.30; H, $5.45; K, $5.70; N, $6.50; WG, $7.80; WW, $8.50; wood works, $3.75 to $3.80.

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### Little Unemployment in Soap Industry

(*From Page* 37)

reduced hours of employment, stated that the hourly wage rate was maintained and that the shortened work day meant therefore an average wage reduction during the entire period of not more than $1.00 a week for the individual employe.

Various methods have been used to keep employment normal. One company which reports a constant growth in business and a 24 hour production day, eliminated overtime in order to give more workers employment. "Employment has increased constantly; we have not had an idle day," is its statement. A small firm writes that during slack periods factory employees were engaged in repair work and the distribution of samples and circulars.

"To assist in the present emergency," a larger manufacturer reports, "we reduced the working day one hour without reducing wages, thus increasing the number employed. We added buildings, thus giving employment to the building industry. Each year a substantial portion of the profits is divided among the employees, in proportion to compensation and length of service. We gave the bonus this year as usual."

In another plant where hours have been reduced 18 per cent, the payroll has been reduced only 12 per cent. Although employment is reported as down from the 1929 peak, the reduction has been the result of turn-over and not lay-offs. "If conditions require lay-offs," this company states, "we will do this by selecting those without dependents."

Guaranteed employment plans in operation over a period of years have kept employment normal in three large companies. "From a social and economic standpoint, this plan has been the most productive move this company has ever made," is the remark of one of them. It is now employing 2 per cent more workers than the average number in 1929.

In other companies, manufacturing for stock, repair work, additional building programs, general cleaning, and limitation of piece work have been methods of keeping employment and wages at the regular standard.

*Market Report on*

# TALLOW, GREASES AND OILS

(*As of March* 6, 1931)

NEW YORK—It is the general belief in the trade that the past month has seen the lowest prices on oils, fats and greases that will be seen for a long time to come. Early in the period a number of fractional declines were recorded, but since that time definite strength has been shown both in foreign and domestic markets. The long downward movement must stop somewhere, and many supplied with accurate market information believe that this point has been reached and passed. Coconut oil was one of the prominent oils which was believed to have rounded the bottom of the price curve. It dropped early in the period, recovered this ground later on and closed in a much firmer position. Tallow also declined during the period and at the lower level there was some increase in interest among buyers. Reports from the Antarctic still forecast a record whale oil production, which prevents any real bullish sentiment from developing in the oil market.

### Coconut Oil

Coconut oil dropped from an inside price of 4¾c lb. for New York tanks to 4⅝c at one point during the period, but toward the close renewed activity in European and Oriental copra markets sent the price back up to 4¾c. Copra markets are steady and fractionally higher, standing now at 2.55c to 2.75c lb.

### Corn Oil

The corn oil market maintained a decidedly steady tone throughout the recent period, with quotations advancing a quarter cent a pound during the month to close at 7½c lb. for mill tanks. This was the more remarkable in view of the falling position of most of the other oils through the early part of the period. Offerings of oil showed no tendency to increase at the advance.

### Palm Kernel Oil

Palm kernel oil dropped off a quarter cent a pound during the period after its show of strength last period. Quotations fell to 4⅞c lb. in tank

cars, but even at this decline buyers exhibited little interest because of the more attractive quotations on competing oils.

TALLOW

Tallow again registered a fractional decline during the period, falling off to an inside price of 3½c lb. for special. Buyers continue to refuse to anticipate even at these favorable quotations. Offerings from producers are light.

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**American Soap Mill Equipment**

The mill rooms of American soap plants are not as well equipped with up-to-date mills as English factories of equal importance, according to a statement by Major F. de M. Tubman, general manager of Buhler Brothers, London, in the *Soap Trade & Perfumery Review*. In commenting on some of his observations in a recent tour of American soap plants, Major Tubman said: "There is much the same multiplicity of varieties of toilet soap mills in American toilet soap rooms as one finds in England, except that on the whole, soap mills with granite rolls are more often seen. I had heard so much of the progressiveness of everything American that I was all the more surprised to find that American soap manufacturers have on the whole not a lengthy experience of modern high-speed roller mills with water-cooled rolls, etc. But Americans are a vigorous people when they are set thinking, and today in almost every toilet soap room that I saw is found at least one, and sometimes two or three, different types of high-speed roller mills so installed that their respective merits or demerits could be closely observed. Still, for all that, it is obvious that the best toilet soap rooms which I saw in U. S. A. were not as completely equipped with up-to-date mills as English factories of corresponding importance."

"The corrugated washing board so familiar in the English household is probably found only in American museums. I saw none offered for sale. The rotary washing machine is on sale everywhere, and it appears to be as universal as the radio. Such a washer calls for a thin, readily-soluble chip, and the American Machinery manufacturer has obviously enabled the soap manufacturer to give the public the very thing the housewife needs in the form of thin, curly chips which can be very cheaply sold in bulky packets."

——o——

A. Gross & Co., New York, stearic acid and red oil, plan to move their offices from 90 West Street to Suite 4604 in the Chanin Building early in April.

# CURRENT PRICE QUOTATIONS

## Chemicals

| | | | |
|---|---|---|---|
| Acetone, C. P., drums | lb. | .11¼ | .14 |
| Acid, Boric, bbls., 99½% | ton | 135.00 | 162.50 |
| Cresylic, 97% dk., drums | gal. | .55 | .60 |
| 97-99%, pale, drums | gal. | .60 | .70 |
| Formic, 90%, tech. | lb. | .10½ | .12 |
| Oxalic, bbls. | lb. | .11 | .11¼ |
| Adeps Lanae, hydrous, bbls. | lb. | .14 | .15 |
| Anhydrous, bbls. | lb. | .15 | .16 |
| Alcohol, Ethyl, U. S. P., bbls. | gal. | 2.63 | 2.74 |
| Complete Denat., No. 5, drums, ex. | gal. | .39 | .41 |
| Alum. potash lump | lb. | .03¼ | .03½ |
| Ammonia Water, 26°, drums, wks. | lb. | .02¾ | .03 |
| Ammonium Carbonate, tech., bbls. | lb. | .08 | .09 |
| Bleaching Powder, drums | 100 lb. | 2.00 | 2.60 |
| Borax, pd., cryst., bbls., kegs | ton | 66.00 | 77.50 |
| Carbon Tetrachloride, car lots | lb. | — | .06¼ |
| L. C. L. | lb. | .06¾ | .07 |
| Caustic, see Soda Caustic, Potash Caustic | | | |
| China Clay, filler | ton | 10.00 | 25.00 |
| Cresol, U. S. P., drums | lb. | .14 | .19 |
| Creosote Oil, tanks | gal. | .13 | .16 |
| Formaldehyde, bbls. | lb. | .06½ | .07 |
| Fullers Earth | ton | 15.00 | 24.00 |
| Glycerine, C. P., drums | lb. | .12½ | .13 |
| Dynamite, drums | lb. | .10½ | .10¾ |
| Saponification, tanks | lb. | .08½ | .09½ |
| Soaps, Lye, tanks | lb. | .06¾ | .07 |
| Hexalin, drums | lb. | — | .60 |
| Kieselguhr, bags | ton | — | 35.00 |
| Lanolin, see Adeps Lanae. | | | |
| Lime, live, bbls. | per bbl. | 1.70 | 2.20 |
| Menthol, cases | lb. | 3.70 | 4.00 |
| Synthetic, tins | lb. | 3.00 | 3.60 |
| Mercury Bichloride, kegs | lb. | 1.65 | 1.80 |
| Naphthalene, ref. flakes, bbls. | lb. | .04½ | .05½ |
| Nitrobenzene (Myrbane) drums | lb. | .09½ | .11 |
| Paradichlorbenzene, bbls., kegs | lb. | .17 | .25 |
| Paraformaldehyde, kegs | lb. | .38 | .39 |
| Petrolatum, bbls. (as to color) | lb. | .02⅞ | .08⅜ |
| Phenol, (Carbolic Acid), drums | lb. | .14¾ | .16 |
| Pine Oil, bbls. | gal. | .55 | .61 |
| Potash, Caustic, drums | lb. | .06⅛ | .06⅜ |
| Flake | lb. | .07 | .08 |
| Potassium Bichromate, casks | lb. | .08¾ | .09½ |
| Pumice Stone, powd. | 100 lb. | 2.50 | 4.00 |
| Rosins (600 lb. bbls. gross for net)— | | | |
| Grade B to H, basis 280 lbs. | bbl. | 4.30 | 5.45 |
| Grade K to N. | bbl. | 5.70 | 6.50 |
| Grade WG and WW | bbl. | 7.80 | 8.50 |
| Wood, works | bbls. | 3.75 | 3.80 |
| Rotten Stone, pwd. bbls. | lb. | .02½ | .04½ |
| Silica, Ref., floated | ton | 18.00 | 22.00 |
| Soap, Mottled 40 lb. box | lb. | — | .12 |
| Olive Castile, bars, powder | lb. | .12 | .22 |
| Pine Scrub | gal. | .35 | .40 |
| Powdered White, U. S. P. | lb. | .15 | .16 |
| Green, U. S. P. | lb. | .06½ | .07½ |
| Tallow Chips | lb. | .07½ | .08 |
| Liquid Toilet, 15% | lb. | .23 | .25 |
| Liquid Toilet, 20% | lb. | .27 | .28 |
| Whale Oil, bbls. | lb. | .04 | .04½ |

| | | |
|---|---|---|
| Soda Ash, contract, wks., bags, bbls. 100 lb. | 1.12½ | 1.25 |
| Soda Caustic, Cont., wks., sld...100 lb. | — | 2.50 |
| Flake .....lb. | — | 2.90 |
| Liquid, tanks .....lb. | — | 2.20 |
| Soda Sal., bbls. .....100 lb. | 1.00 | 1.15 |
| Sodium Chloride (Salt) .....ton | 11.40 | 14.00 |
| Sodium Fluoride, bbls. .....lb. | .08¼ | .09½ |
| Sodium Hydrosulphite, bbls. .....lb. | .22 | .23 |
| Sodium Silicate, 40 deg., drum, 100 lb. | .75 | .80 |
| Drums, 60 deg. wks. .....100 lb. | — | 1.65 |
| In tanks, 15c less per hundred, wks. | | |
| Tar Acid Oils, 15-25% .....gal. | .24 | .28 |
| Trisodium phosphate, bbls. .....lb. | .03½ | .03¾ |
| Zinc Oxide, lead free .....lb. | .06½ | .07 |
| Zinc Stearate, bbls. .....lb. | .22 | .24 |

## Oils—Fats—Greases

| | | |
|---|---|---|
| Castor, No. 1, bbls. .....lb. | .11¾ | .12 |
| No. 3, bbls. .....lb. | .11¼ | .11½ |
| Coconut, tanks, N. Y. .....lb. | .04¾ | .04⅞ |
| Tanks, Pacific Coast .....lb. | .04½ | .04⅝ |
| Tanks, Chicago .....lb. | .05⅛ | .05¼ |
| Cod, Newfoundland, bbls. .....gal. | .42 | .44 |
| Copra, bulk, Coast .....lb. | .0255 | .0275 |
| Corn, tanks, mills .....lb. | — | .07½ |
| Bbls., N. Y. .....lb. | .09 | Nom. |
| Cottonseed, crude, tanks, mill .....lb. | — | .06½ |
| PSY .....lb. | — | .07⅜ |
| Degras, Amer., bbls. .....lb. | .03¾ | .04½ |
| English, bbls. .....lb. | .04 | .04½ |
| German, bbls. .....lb. | .03¾ | .04¼ |
| Neutral, bbls. .....lb. | .07 | .09 |
| Greases, choice white, bbls., N. Y. ..lb. | .03½ | .05 |
| Yellow .....lb. | .02⅞ | .03 |
| Brown .....lb. | .02¾ | .02⅞ |
| House .....lb. | .02⅞ | .03 |
| Lard, prime, steam, tierces .....lb. | .08½ | .08⅞ |
| Compound, tierces .....lb. | .09¾ | .10 |
| Lard Oil, edible prime .....lb. | — | .12½ |
| Extra, bbls. .....lb. | — | .09¼ |
| Extra, No. 1, bbls. .....lb. | — | .08¾ |
| No. 2, bbls. .....lb. | — | .08¼ |
| Linseed, raw, bbls., spot .....lb. | .0940 | .0980 |
| Tanks, raw .....lb. | — | .0880 |
| Boiled, 5 bbls. lots .....lb. | — | .1060 |
| Menhaden, Crude, tanks, Balt. ....gal. | .18 | Nom. |
| Oleo Oil, No. 1, bbls., N. Y. .....lb. | — | .07⅜ |
| No. 2, bbls., N. Y. .....lb. | — | .06⅜ |
| Olive, denatured, bbls., N. Y. .....gal. | .79 | .81 |
| Foots, bbls., N. Y. .....lb. | .06 | .06⅛ |
| Palm, Lagos, casks, spot.....lb. | .05 | .05⅛ |
| Shipments .....lb. | — | .04¾ |
| Niger casks, spot .....lb. | .04¾ | .04⅞ |
| Shipments .....lb. | — | .04⅜ |
| Palm Kernel, pkgs., denatured .....lb. | — | .05⅜ |
| Tank cars, denatured .....lb. | — | .04⅞ |
| Peanut, mill tanks .....lb. | .06¾ | Nom. |
| Crude, bbls., N. Y.....lb. | .09¼ | Nom. |
| Red Oil, distilled, bbls.....lb. | .08⅜ | .08⅞ |
| Saponified, bbls. .....lb. | .08⅜ | .08⅞ |
| Tanks .....lb. | — | .07½ |
| Soya Bean, domestic tanks, N. Y. ..lb. | .05¾ | .06¼ |
| Manchurian, pressed, N. Y. .....lb. | .07½ | .08½ |
| Stearic Acid | | |
| Double pressed .....lb. | .09 | .09½ |
| Triple pressed, bgs. .....lb. | .12 | .12½ |
| Stearine, oleo, bbls. .....lb. | .07½ | .07¾ |
| Tallow, special, f. o. b. plant .....lb. | .03½ | .03¾ |
| City, ex. loose, f. o. b. plant .....lb. | .03¾ | .03⅞ |
| Tallow, oils, acidless, tanks, N. Y....lb. | — | .07½ |
| Bbls., c/1, N. Y. .....lb. | — | .08 |
| Whale, nat. winter, bbls., N. Y.....gal. | .72 | .74 |
| Blchd., winter, bbls., N. Y. .....gal. | .75 | .77 |
| Extra blchd., bbls., N. Y. .....gal. | .78 | .80 |

## Essential Oils

| | | | |
|---|---|---|---|
| Almond, Bitter, U. S. P. | lb. | 2.50 | 2.75 |
| Bitter, F. F. P. A. | lb. | 2.90 | 3.30 |
| Sweet, cans | lb. | .48 | .50 |
| Apricot, Kernel, cans | lb. | .29 | .30 |
| Anise, cans | lb. | — | — |
| U. S. P., cans | lb. | .46 | .48 |
| Bay, tins | | 2.10 | 2.25 |
| Bergamot, coppers | lb. | 2.00 | 2.50 |
| Artifical | lb. | 1.50 | 1.75 |
| Birch Tar, rect., bot. | lb. | .45 | .50 |
| Crude, tins | lb. | .13 | .14 |
| Bois de Rose, Brazilian | lb. | .78 | .80 |
| Cayenne | lb. | 1.50 | 1.60 |
| Cade, cans | lb. | .26 | .27 |
| Cajuput, native, tins | lb. | .70 | .80 |
| Calamus, bot. | lb. | 2.75 | 3.00 |
| Camphor, Sassy, drums | lb. | .22 | .24 |
| White, drums | lb. | .17 | .19 |
| Cananga, native, tins | lb. | 2.20 | 2.35 |
| Rectified, tins | lb. | 2.60 | 2.80 |
| Caraway Seed | lb. | 1.60 | 1.70 |
| Cassia, Redistilled, U. S. P., cans | lb. | 1.10 | 1.20 |
| Cedar Leaf, tins | lb. | .90 | .95 |
| Cedar Wood, light, drums | lb. | .40 | .42 |
| Citronella, Java, drums | lb. | .49 | .54 |
| Citronella, Ceylon, drums | lb. | .39 | .42 |
| Cloves, U. S. P., cans | lb. | 1.60 | 1.65 |
| Eucalyptus, Austl., U. S. P. cans | lb. | .39 | .40 |
| Fennel, U. S. P., tins | lb. | .95 | 1.20 |
| Geranium, African, cans | lb. | 3.75 | 4.00 |
| Bourbon, tins | lb. | 3.50 | 3.75 |
| Hemlock, tins | lb. | .90 | .95 |
| Lavender, U. S. P., tins | lb. | 2.00 | 2.75 |
| Spike, Spanish, cans | lb. | .65 | .75 |
| Lemon, Ital., U. S. P. | | .80 | 1.10 |
| Lemongrass, native, cans | lb. | .64 | .65 |
| Linaloe, Mex., cases | lb. | 2.15 | 2.30 |
| Neroli, Artificial | lb. | 10.00 | 20.00 |
| Nutmeg, U. S. P., tins | lb. | 1.25 | 1.35 |
| Orange, Sweet, W. Ind., tins | lb. | 2.00 | 2.20 |
| Italian cop. | lb. | 2.10 | 2.50 |
| Distilled | lb. | 1.05 | 1.10 |
| Origanum, cans, tech. | lb. | .25 | .40 |
| Patchouli | lb. | 4.75 | 6.50 |
| Pennyroyal, dom. | lb. | 1.55 | 1.60 |
| Imported | lb. | 1.10 | 1.15 |
| Peppermint, nat., cases | lb. | 1.80 | 2.00 |
| Redis., U. S. P., cases | lb. | 1.95 | 2.10 |
| Petit Grain, S. A., tins | lb. | 1.20 | 1.30 |
| Pine Needle, Siberian | lb. | .65 | .70 |
| Rose, Natural | oz. | 14.00 | 16.50 |
| Artificial | oz. | 2.00 | 2.75 |
| Rosemary, U. S. P., drums | lb. | .40 | .45 |
| Tech., lb. tins | lb. | .30 | .35 |
| Sandalwood, E. Ind., U. S. P. | lb. | 8.15 | 8.50 |
| Australian | lb. | 5.65 | — |
| Sassafras, U. S. P. | lb. | .90 | 1.10 |
| Artificial | lb. | .29 | .32 |
| Spearmint, U. S. P. | lb. | 2.30 | 2.40 |
| Thyme, red, U. S. P. | lb. | .70 | .80 |
| White, U. S. P. | lb. | .85 | .90 |
| Tech. | lb. | .60 | .70 |
| Vetivert, Bourbon | lb. | 5.60 | 5.80 |
| Java | lb. | 16.00 | 20.00 |
| Ylang Ylang, Bourbon | lb. | 5.25 | 6.50 |

## Aromatic Chemicals

| | | | |
|---|---|---|---|
| Acetophenone, C. P. | lb. | 3.00 | 4.25 |
| Amyl Cinnamic Aldehyde | lb. | 4.00 | 8.00 |
| Anethol | lb. | 1.50 | 2.00 |
| Benzaldehyde, tech. | lb. | .60 | .65 |
| F. F. C. | lb. | 1.10 | 1.35 |
| Benzyl, Acetate | lb. | .75 | 1.10 |
| Alcohol | lb. | 1.20 | 1.50 |
| Citral | lb. | 2.50 | 3.00 |
| Citronellal | lb. | 1.50 | 2.00 |
| Citronellol | lb. | 3.00 | 5.00 |
| Citronellyl Acetate | lb. | 13.00 | 14.00 |
| Coumarin | lb. | 3.50 | 4.00 |
| Diphenyl oxide | lb. | 1.15 | 1.25 |
| Eucalyptol, U. S. P. | lb. | .85 | .95 |
| Eugenol, U. S. P. | lb. | 3.25 | 3.75 |
| Geraniol, Domestic | lb. | 1.50 | 2.00 |
| Imported | lb. | 2.00 | 2.50 |
| Geranyl Acetate | lb. | 2.50 | 3.50 |
| Heliotropin, dom. | lb. | 1.90 | 2.00 |
| Imported | lb. | 2.25 | 2.50 |
| Hydroxycitronellal | lb. | 5.50 | 6.00 |
| Indol, C. P. | oz. | 3.00 | 6.50 |
| Ionone | lb. | 4.00 | 10.00 |
| Iso-Eugenol | lb. | 4.50 | 5.00 |
| Linalool | lb. | 2.25 | 4.00 |
| Linalyl Acetate | lb. | 3.50 | 5.00 |
| Menthol | lb. | 3.75 | 4.00 |
| Methyl Acetophenone | lb. | 2.10 | 2.90 |
| Anthranilate | lb. | 2.40 | 2.60 |
| Paracresol | lb. | 8.00 | 9.00 |
| Salicylate, U. S. P. | lb. | .40 | .43 |
| Musk Ambrette | lb. | 6.50 | 7.50 |
| Ketone | lb. | 6.00 | 7.00 |
| Moskene | lb. | 5.40 | 5.90 |
| Xylene | lb. | 2.50 | 3.00 |
| Phenylacetaldehyde | lb. | 4.00 | 8.00 |
| Phenylacetic Acid, 1 lb. bot. | lb. | 3.00 | 4.00 |
| Phenylethyl Alcohol, 1 lb. bot. | lb. | 4.25 | 4.50 |
| Rhodinol | lb. | 7.00 | 18.00 |
| Safrol | lb. | .30 | .32 |
| Terpineol, C. P., 1,000 lb. drs. | lb. | .28 | .30 |
| Cans | lb. | .32 | .33 |
| Terpinyl Acetate, 25 lb. cans | lb. | .80 | 1.15 |
| Thymol, U. S. P. | lb. | 2.10 | 2.20 |
| Vanillin, U. S. P. | lb. | 4.50 | 5.75 |
| Yara Yara | lb. | 1.40 | 2.00 |

## Miscellaneous

| | | | |
|---|---|---|---|
| Insect Powder, bbls. | lb. | .22 | .23 |
| Concentrated Extract | lb. | 1.80 | 1.90 |
| Gums— | | | |
| Arabic, Amb. Sts. | lb. | .11 | .11½ |
| White, powdered | lb. | .21 | .25 |
| Karaya, powdered | lb. | .25 | .26 |
| Tragacanth, Aleppo, No. 1 | lb. | 1.28 | 1.40 |
| Sorts | lb. | .40 | .45 |
| Turkish, No. 1 | lb. | .90 | .95 |
| Waxes— | | | |
| Bayberry, bgs. | lb. | .21 | .24 |
| Bees, white | lb. | .39 | .41 |
| African, bgs. | lb. | .22 | .23 |
| Refined, yel. | lb. | .26 | .30 |
| Candelilla, bgs. | lb. | .13½ | .14 |
| Carnauba, No. 1 | lb. | .21½ | .22 |
| No. 2, Yel. | lb. | .19½ | .20 |
| No. 3, Chalky | lb. | .13 | .13½ |
| Japan, cases | lb. | .09½ | .10 |
| Paraffin, ref. 125-130 | lb. | .03⅜ | .04⅛ |

Frank J. Lynch, formerly president of Sun Tube Corp., Hillside, N. J., has recently resigned that position. His future plans have not been stated any more definitely than that he will probably make a connection with another manufacturer of collapsible tubes. His successor has not yet been announced.

—o—

Fred A. Brown, district superintendent of Port Ivory plant of Procter & Gamble Co., recently spoke to the Staten Island, N. Y., Kiwanis Club, on stabilization of employment.

—o—

James J. Hinde, one of the partners in the founding of Hinde & Dauch Paper Co., Sandusky, Ohio, died February 22 of pneumonia at the age of seventy-six.

—o—

Soap powders, flakes and chips produced 34 per cent of all soap and cleanser sales in the 26 retail stores whose operations were analyzed in a recent survey of Louisville, Ky., stores by U. S. Department of commerce. Toilet soaps followed in importance, accounting for 27.1 per cent of sales. Sales of laundry soaps amounted to 22.2 per cent of the total, cleansers produced 8 per cent of the volume in this line, and miscellaneous items 8.7 per cent.

By estimating the catch of a few ships not reporting, the total production of whale oil by Norweigan companies up to the end of 1930 amounted to about 1,135,000 barrels, according to a report from U. S. Trade Commissioner Carlson at Oslo. At the same time last year the total stood at 828,000 barrels. The production for companies other than Norwegian equalled about 670,000 barrels as compared to 410,000 at the end of 1929. Of these foreign companies, those with strong Norwegian interests represent 270,000 barrels. The total for antarctic catch up to December 31st makes an impressive figure of 1,805,000 barrels as compared to 1,238,000 for 1929. The last sale announced for whale oil was for about 20 sterling per ton (about $97.00).

—o—

Collapsible tube manufacturers will ship their products largely by motor truck in the future, instead of by railroad, if the proposed new freight rate is put into effect. This and other points were brought out by Milton P. Bauman, counsel for the tube makers, in a hearing before the Consolidated Classification Committee, held in New York last month. Fourteen tube companies and 15 large consumers sent representatives to the meeting to enter their protests against increased shipping charges.

## Coconut Oil

(*From Page* 23)

for before it is available either for export or for crushing at Manila or Cebu, where the Philippine crushing plants are located.

WE now come to the parting of the ways. West meets East and copra comes under the spell of a highly specialized and scientific development. The East has done its part in giving to the world its product. It has labored under many difficulties with the crudest methods. The call of the West has been answered with a challenge to carry on and to fulfill its part in making available the many benefits which the product has to offer.

The West's acceptance of that challenge, the invention, system and organization it has built to meet it, forms another story equally interesting in that it transforms the old to the new, the crude to the modern, the East to the West. Perhaps the greatest benefit is in the strong bond of mutual understanding and interdependence of two peoples, far different in most of their ordinary modes of living, economically, politically and socially.

A battery of tanks for storage of coconut oil awaiting shipment.

The uses for copra, whether exported from or crushed in the Philippines, are the same. Therefore, since we have followed its production there, we shall visit one of the large crushing plants at Manila. When copra is received, it usually contains more moisture than is considered satisfactory for use. It is stored for further drying in large, airy bodegas (warehouses) about thirty days, when it is ready for its conversion into coconut oil.

THE copra is fed into a machine which breaks it into very small pieces. It is then ground into a coarse meal and steam-cooked about three hours and then passed through the expellers for expression of the oil. The residue, or cake, is broken and ground into a fine meal, again steam-cooked and fed into a hydraulic press which compresses the cake, extracting further quantities of oil. The oil is run through a filter press and then into large storage tanks for shipment to the United States. Copra contains from 60 to 70 per cent of oil. The cake is broken, bagged and sold for cattle feed, principally to European countries.

Transportation again assumes command, and the West demonstrates the magnitude of its operations. For many years, the coconut oil shipped from the Philippines was carried in the ballast tanks of passenger and freight steamers. These tanks are usually placed in the stern and bow of the vessel and are filled with seawater when no cargoes are obtainable. Naturally, it is of interest to the steamship companies to fill these tanks with oil, as it furnishes them with revenue and ballast at the smae time.

One large company operating two crushing plants at Manila has placed a fleet of tankboats in service between its Manila mills and United States refineries. These tankers have compartments, each holding about 1000 long tons or 2,240,000 pounds of oil. The capacities of these tankers is around 7000 long tons. The sailing time of passenger ships from Manila to New York or New Orleans is from 65 to 75 days, depending on the number of and locations of other ports of call. The tankboats plying direct take about 55 days. If the steamer has European or Mediterranean ports of call, the Suez Canal route is used. Direct sailings to the eastern seaboard of the United States are made via the Panama Canal route.

FOR the oil in the storage tanks at Manila, there is another operation before the steamers can be loaded. Most of the crushing plants are located on the Pasig River, which runs through the city of Manila. There are no piers at which the steamers may tie up, as the shallowness of the stream does not permit. Therefore the oil must be loaded into tank barges and lightered to the steamers in mid-stream. The oil is run through a scale, then pumped through pipelines to the tank barges, floated to the steamers and pumped into ship's tanks.

Before a steamer can be loaded, very careful examination and inspection of its tanks must be exercised. They must be absolutely clean and free from odors of other cargoes that may have

been in the tanks. They must positively be tight and every rivet tested to be certain of no leakage of sea water into the tank or oil from the tank. They must be steam-coil equipped, as the coconut oil becomes solid at a temperature lower than 72 degrees F. and must be liquified by heating for unloading in Northern waters.

Coconut oil is very sensitive in its nature and quickly becomes contaminated if exposed to outside odors. It will readily be understood why extreme care must be exercised in every step of its production, storage, transportation and refining. On arrival at the discharging port of the United States, preparations started while the oil was enroute begin to function. The first procedure is to take samples from each tank and subject them to rigid laboratory analyses to determine whether the quality has been impaired during its long journey. Satisfied on this point, the oil is pumped into scales to determine the landed weights, and then into tankcars or tankbarges for shipment to its purchasers.

Some large coconut oil operators, located on seaboard, have the ships discharge at their own plants, and after weighing the oil, pump it directly into their storage tanks and hold it subject to the call of the trade.

As before mentioned, coconut oil is very sensitive by nature, and it is this characteristic that makes it inadvisable to refine it in the Philippines. Therefore, all refining operations are carried on in the United States and only the Manila (crude) oil is imported here. There is a big advantage in this to the trade in that their requirements are filled with oil fresh and pure in its refined form and its quality maintained on a uniform standard.

Coconut oil is supplied to the trade in various packings, suitable to their individual needs. The large quantity users usually purchase in cargo lots, that is, they contract for the quantities contained in a ship's tank or tanks. These may run from 500 to 3000 long tons. Such purchasers supply their own tankcar equipment to carry the oil from port of discharge to their plant or plants. Other large consumers purchase in tankcar quantities, drawing the oil from a seller's storage, and in these instances, the seller usually furnishes the tankcars.

For those consumers who are not equipped to handle the oil in tankcars, barrels and steel drums, the latter being of two types, returnable and non-returnable, are supplied. In some instances, where a consumer is located within trucking distance of a coconut oil seller, tankwagons are used. Other consumers, also located on seaboard, are supplied in tankbarges.

(*Turn to Page* 109)

# INSECTICIDE AND DISINFECTANT REVIEW

Volume VII, No. 3 March, 1931


# A Simple Practical Method of Closure Selection

## Shipping and Storage Conditions Reproduced in 744 Hour Heat Test

OF the various ways to determine the relative efficiency of available closures, probably the one most widely used is a heat test of some unusually difficult-to-hold product sealed with the closures under consideration.

Recently a manufacturer of a medicinal mineral oil varied this method. Instead of getting together a group of bottles and caps, carefully packaging this product for such a test, he purchased from various drug stores a large number of bottles of mineral oil under various types of closures. When these were assembled it was found that he had eight brands under as many different and leading reseal closures.

After bringing the products to uniform room temperature all the bottles were fitted with absorbent hoods, which would show the first signs of leakage or seepage, and were placed in a controlled electric oven, where they could be subject to frequent and easy examination.

For 24 hours the temperature of this oven was kept at only 95° Fahrenheit. By referring to the chart, you will see the results of the test. The group represented by closure H, Kork-N-Seal, was easily the outstanding survival. After 744 hours (30 days) of heat, the last 500 odd hours at 170°, when no leakage or seepage developed, the test was discontinued.

| Hours | 0 | 24 | 48 | 72 — | 96 | 120 | 144 | 168 | 192 | 216 | 240 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Temp. | 95° F | 105° F | 115° F | 125° F | 130° F | 140° F | 150° F | 160° F | 170° F | 170° F | |
| CLOSURE A | ~7½ hrs | | | | | | | | | | |
| CLOSURE B | ~10 hrs | | | | | | | | | | |
| CLOSURE C | ~16 hrs | | | | | | | | | | |
| CLOSURE D | | | ~49 hrs | | | | | | | | |
| CLOSURE E | | | ~57 hrs | | | | | | | | |
| CLOSURE F | | | ~50½ hrs | | | | | | | | |
| CLOSURE G | | | | | | ~128 hrs | | | | | |
| KORK-N-SEAL H | | | | | | | | | | | |

— Denotes start of leakage. This test continued for 744 hrs without leakage or seepage

***3 out of 8 standard closures failed to pass even the simplest heat-pressure test, 95 degrees! Only one, Kork-N-Seal, survived, when the temperature was raised to 170 degrees.***

The manufacturer's conclusion was obvious—that only Kork-N-Seal would give him the margin of protection required for the sealing of his product.

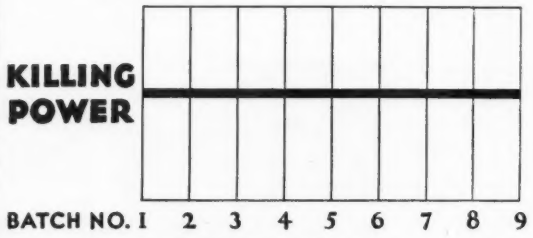
Whether you package mineral oil or other difficult-to-hold products, the protection Kork-N-Seal brings to your package is of equal value. In no other way can you secure the full margin of safety necessary to escape the ordinary hazards of shipment, storage, and other exposure to heat.

KORK-N-SEAL CAPPING MACHINES

*Kork-N-Seals are easily and economically applied with special capping machines operating at speeds from 20 to 120 Containers per minute. There is a machine with a capacity particularly suited to your requirements. A special feature is the relieving of the body of the bottle from all strains incurred in the capping operation. This makes possible the use of liners of greater density than has been heretofore practical, increasing the factor of safety in the sealing of unusually penetrating products. Write for complete details.*


**DIRECT EXTRACTION**
(Fluctuates)

When you use pyrethrum concentrate made by direct extraction the pyrethrin content of each batch of fly spray or household insecticide will vary, perhaps as widely as from .04 grams *(too weak)* to .12 grams *(too wasteful)* per 100 cc.




**PYROCIDE NO. 20**
(Standardized)

When you use Pyrocide No. 20 as the base for your fly spray or household insecticide, using one part Pyrocide to 19 parts light mineral oil, the pyrethrin content is stabilized at .09 grams per 100 cc.—every batch the same—because the pyrethrin content of Pyrocide No. 20 is standardized.

# You can Stabilize the *Killing Strength* of your Fly Spray by using Pyrocide No. 20

THE killing strength of pyrethrum flowers varies from batch to batch. Laboratory tests of one hundred samples of pyrethrum showed a variance from 0.38% to 1.21% pyrethrins—and fly sprays made from unstabilized extracts or extracts made by direct percolation from the flowers will vary as widely as the flowers themselves.

Through application of the Gnadinger method for assaying pyrethrum flowers we stabilize the pyrethrin content of Pyrocide No. 20 at 1.8 grams per 100 cc.

By using Pyrocide No. 20 as a base for your fly spray or household insecticide you absolutely standardize the killing strength of your finished product.

Pyrocide No. 20 mixes easily with light mineral oil. We guarantee that when diluted one part Pyrocide No. 20 to nineteen parts of light mineral oil the result will be a satisfactory insecticide, with a pyrethrin content of .09 grams per 100 cc. Pyrocide No. 20 is guaranteed and labeled to contain 1.8 grams of pyrethrins per 100 cc. It is shipped in steel drums containing 10, 30 and 53 *(American)* gallons.

We also can supply you with pyrethrum flowers with known pyrethrin content in whole, ground or powdered form. Stock of flowers having a very high content of pyrethrin carried in New York for your convenience.

*Wire today,* McLAUGHLIN GORMLEY KING COMPANY, 1715 Fifth Street S. E., *Minneapolis, Minnesota*

**PYROCIDE No. 20**
**CONCENTRATED EXTRACT OF PYRETHRUM FLOWERS**

*Say you saw it in SOAP!*

# INSECTICIDE AND DISINFECTANT REVIEW

Official Publication of *The Insecticide and Disinfectant Manufacturers Association.*
Harry W. Cole, Holbrook, Mass., Secretary.

VOLUME SEVEN NUMBER THREE


## Credit and Rating

A MORE careful extension of credit right at this time is the natural consequence of business conditions as they have been during the past year. The credit status of small business organizations on the whole is not as good today as it was a year or two ago. Slow collections have caused many large companies to tighten their credit rules, and this, in turn, has worked a hardship on firms whose operating capital is small. Where restrictions on credit have been tightened, there has been a tendency, as might be expected, for buyers to shift from one supplier to another in an attempt to secure the same freedom of credit which was enjoyed previously. That there has been considerable bad feeling engendered by the limitations, and the refusal of the new suppliers to sell goods on open account, goes without saying.

This whole situation should be looked upon with perfect frankness, and no firm without a good rating or well established connections, should take it amiss because credit is refused them. They are in business to sell goods at a profit, and to get their money within a reasonable time after a sale has been made. It is only right that their suppliers should take the same attitude. If a supplier does not know the prospective buyer, and the buyer has no credit rating in the usual places, what assurance has the seller that he will get his money? There is only one way in which any seller can have this assurance, and that is by securing payment upon delivery of the goods or in advance of shipment. Those who own and operate small organizations which ask credit from a house with whom business has never been done before, should look the thing square in the face instead of becoming angry. Under the same circumstances, would you extend credit to a stranger? A request for payment in advance, or C. O. D., is not intended to reflect on any single house. It is not done with any idea of humiliating the prospective buyer. It is just good business common sense with which the buyer should be in full accord.

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## Sprayers and Sprayers

ACCORDING to maker and cost, sprayers for insecticides and other spray products are available in a multitude of shapes, sizes, types, and qualities. There are those which spray a finely divided mist and those which do not, those which drip and those which literally squirt a stream, those which throw drops and those which cannot. At retail, sprayers can be had in five and ten cent stores for a dime and at an adjoining store all the way up to two dollars. It is the old story of almost any quality and at any price the buyer wants to pay.

In this sprayer sale, the manufacturer of insecticides has a considerably larger stake than he might believe. An insecticide is liable to be used in most any type of sprayer, according to what the user may happen to have on hand. That a product used in a cheap, poor quality sprayer, may be ineffective against insects, but effectively

(*Turn to Page* 111)

# The Insecticide *and* Disinfectant Manufacturers Association

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Active — Open to manufacturers and wholesale distributors of disinfectants, germicides, deodorants, insecticides, liquid soaps, polishes, and allied products. Dues—$75.00 per year.
Associate—Open to firms supplying raw materials, containers, equipment, etc., to the membership. Dues—$50.00 per year.

*For further details, communicate with*

INSECTICIDE & DISINFECTANT MANUFACTURERS ASSOCIATION

Harry W. Cole, Secretary

HOLBROOK MASS.

## Notes of the Trade

The plant of the International Chemical Company, Chicago, manufacturers of sanitary products, was completely destroyed by fire late in February. Plans are now under way for rebuilding.

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Continental Chemical Corp., Watseka, Ill., has completed arrangements to act as distributors for Hild Floor Machine Co., Chicago, manufacturers of machines for scrubbing and polishing floors. Continental Corp. manufactures a complete line of sanitary specialties, including floor treating preparations. Formerly the company had a working agreement with Finnell System, Elkhart, Ind., also floor machine manufacturers.

——o——

Rochester Polish Corp., makers of Polyshine shoe polish, recently changed its corporate name to Polyshine, Inc. Officers of the company are: M. C. Wetmore, president; W. A. Hennessy and George R. West, vice-presidents; George E. Davison, treasurer; W. H. Reynolds, secretary, and W. A. Watters, assistant secretary.

——o——

H. D. Hudson Manufacturing Co., Chicago, manufacturer of a complete line of sprayers, reports that their business has been very satisfactory during the past year and that they have been fortunate in gaining many new accounts. This is in line with other reports which have filtered in from the Chicago territory, where the general outlook seems to be considerably more optimistic than in some other parts of the country.

——o——

A recent resolution passed by the U. S. House of Representatives would double the appropriation given the Department of Agriculture for the eradication of rodents and predatory animals. The bill calls for $653,600 for rodent extermination.

——o——

Pepsodent Co., Chicago, recently added a new plant to its antiseptic division by taking over a three-story building at Iron and 37th streets. Plant No. 1 has been operating on a seven-day a week, twenty-one hour daily schedule for the last three months.

——o——

H. W. Sickler, of Janitors Supply Co., Pittsburgh, died recently at the age of fifty-six. He was a prominent figure in the sanitary supply business and was instrumental in the formation of the National Sanitary Supply Association.

# The Insecticide Possibilities of DERRIS ROOT

By R. C. ROARK *

Chief, Insecticide Division,
Bureau of Chemistry and Soils, Dept. Agric.

ROTENONE is the chief insecticidal constituent of the roots of certain leguminous fish poisoning plants, the better known of which are *Derris elliptica* from the Malay Peninsula and the East Indies, and cube (*Lonchocarpus nicou*) from South America. It is a white crystalline substance melting at 163 degrees Centigrade. It is insoluble in water, very slightly soluble in petroleum hydrocarbons, such as kerosene (about 1 gram in a liter), slightly soluble in methyl and ethyl alcohols, readily soluble in acetone, benzene and toluene, and highly soluble in chloroform, ethylene dichloride and trichloroethylene. (Jones and Smith, J. Am. Chem. Soc. 52: 2554-2562, 1930).

Rotenone has the empirical formula $C_{23}H_{22}O_6$ but its structure is as yet unknown. LaForge and associates are now working on this problem (J. Am. Chem. Soc. 51: 2574-2581, 1929; 52: 1088-1090; 1091-1098; 1102-1104; 2480-2483; 2878-2881; 3207-3212; 3603-3609; 4505-4509; 4595-4598, 1930). It contains two methoxyl ($OCH_3$) and one ketone (CO) group and the compound also has a lactone linkage.

### *Uses as an Insecticide*

TESTS have shown rotenone to be one of the most powerful insecticides known, and its efficacy is manifested in nearly every way in which an insecticide is used. W. M. Davidson, of the Food and Drug Administration, U. S. D. A. (J. Econ. Ent. 23: 868-874, 1930) has tested it as a contact insecticide against a wide variety of insects including several species of aphids, leafhoppers, thrips, greenhouse white flies, tent caterpillars, red spiders, squash bugs, roaches, Mexican bean beetles, Japanese beetles, potato beetles, mosquitoes, and lice (Mallophaga) on chickens, and found it effective against nearly all of these. It is about 15 times as toxic as nicotine when tested against the bean aphid (*Aphis rumicis*). It is very evident that there is a wide field of usefulness for rotenone as an agricultural contact insecticide.

Rotenone has also proven to be a powerful insecticide against leaf-eating insects. Dr. F. L. Campbell of the U. S. Bureau of Entomology has conducted insectary tests which show that rotenone when fed to silkworm larvae is 30 times as toxic as is lead arsenate (Northwest Fruit Grower 2: 22, 1930). Rotenone is thus remarkable in that it is highly potent both as a contact insecticide and as a stomach insecticide.

Extensive research is now under way in the United States Department of Agriculture and in several State agricultural experiment stations in an endeavor to find a non-arsenical substitute for lead arsenate. The British Government prohibits the importation of apples containing more than the equivalent of 0.01 grain $As_2O_3$ per pound, and in this country, the interstate shipment of apples bearing a spray residue equivalent to more than 0.017 grain $As_2O_3$ per pound is considered a violation of the Food and Drugs Act. Rotenone has given encouraging results in experimental tests for the control of the codling moth and may prove an acceptable substitute for lead arsenate. Since about 30,000,000 pounds of lead arsenate are consumed annually in the United States, the potential market for a stomach insecticide that will prove a successful substitute for it is very great.

Rotenone has great possibilities for use in household insecticides. Davidson (J. Econ. Ent. 23: 873, 1930) in cage tests found a mixture of 1 part rotenone with 99 parts kaolin to be effective in killing cockroaches. Other experimenters have reported that as little as 1 gram of rotenone per liter of kerosene makes a good fly spray.

It is undoubtedly one of the most potent insecticides known for combating certain external parasites on dogs, cats, canary birds and other pets. Bishopp (J. Econ. Ent. 23: 852, 1930) has found powdered derris root and carriers containing derris extract to be effective against cattle grubs (*Hypoderma larvae*) when applied to the backs of cattle.

*Before Insecticide & Disinfectant Mfrs. Assn., New York.

Careful tests by Dr. D. W. Buckingham, (Ind. Eng. Chem. 22: 1133-1134, 1930) a veterinarian, have shown that rotenone, when administered by mouth, is harmless to dogs, cats, pigs, sheep and chickens. Puppies when fed rotenone in doses up to 1 grain per pound of body weight showed no reaction. These results are of great significance because they indicate that a spray residue of rotenone upon apples or other fruits or vegetables would be non-toxic to man.

*Supply of Derris and Other Plants*

DERRIS is now being cultivated on plantations in British Malaya and in Sumatra. It is frequently interplanted with rubber, or kapok. One acre yields about 1,000 pounds of dried roots. At the age of two years, the roots are stated to contain a maximum of the insecticidal constituents.

The acreage devoted to derris has increased in recent years. In 1928 more than 80,000 pounds of dried roots were exported from the Federated Malay States (Georgi and Curtler, Malayan Agr. Jour. 17: 326-334, 1929), and in addition, material was shipped from Sumatra and the unfederated Malay States. The roots had an average value of 19 cents per pound. In the United States derris root has been quoted as low as 25 cents per pound but higher grades have sold at 50 cents to seventy-five cents per pound. There is no uniform market price for the material.

The amount of rotenone in derris root varies greatly. We have examined samples of authentic derris root that contained no rotenone but a large proportion of toxicarol, which is much less valuable as an insecticide. Six per cent. appears to be the maximum percentage of rotenone in derris root and the average is about 2 per cent. Samples of cube root have been found to contain 7 per cent. rotenone. As yet cube is not obtainable in commercial quantities.

Haiari vines from British Guiana are now being exploited for use as insecticides. These vines are closely related botanically to cube and also contain rotenone.

Various assay procedures for the evaluation of derris root have been proposed. Some producers offer derris root on the basis of 3 cents a pound for each per cent. of ether extract present. A root analyzing 20 per cent. ether extract would bring 60 cents a pound. We have found some samples of root to contain a high proportion of ether extract (more than 20 per cent.) and yet be almost entirely lacking in rotenone.

The determination of methoxyl in the ether extract as proposed by Tattersfield and Roach (Ann. Appl. Biol. 10: 1-17, 1923) does not give information of value because tephrosin, deguelin and toxicarol (constituents of very much less insecticidal power than rotenone) contain almost the same percentage of methoxyl as does rotenone. Total ether extract does not indicate the insecticidal value of a sample of root although in general samples containing very little ether extract (5 per cent. or less) contain little or no rotenone.

The following method for determining rotenone in derris root has been used in the laboratories of the Insecticide Division: "One hundred grams of dry ground root (20 mesh) is completely extracted in a Soxhlet apparatus with ether. The extract is concentrated to about 25 cc. and transferred to a 125 cc. flask. The original container is washed with three 5 cc. portions of ether, and the combined extract and washings are concentrated to 25 cc. The extract is then set aside for one day to allow the rotenone to crystallize. In order to hasten crystallization the flask is occasionally scratched. The rotenone is then filtered upon a tared Gooch crucible containing a filter paper disc, washed with about 10 cc. of ether in small portions, dried, and weighed."

Derris root contains a number of compounds of insecticidal value in addition to rotenone. Among these are tephrosin, white crystals, melting point 198 degrees, Centigrade; deguelin, pale green crystals, melting point 171 degrees, Centigrade; and toxicarol, yellow crystals, melting point 218-220 degrees (Clark, Science 71: 396, 1930; J. Am. Chem. Soc. 52: 2461-2464, 1930). These same constituents are also found in one or more other fish poison plants. For example, the Peruvian plant cube (*Lonchocarpus nicou*) contains rotenone and deguelin; the root of the South American Tephrosia Toxicaria contains toxicarol, and the leaves of the African Tephrosia vogelii contain tephrosin and deguelin. These compounds are closely related chemically and have a somewhat similar toxicity to fish, but vary greatly in insecticidal efficacy. For example, their relative value as contact insecticides when tested against the bean aphid (*Aphis rumicis*) has been found by Davidson (J. Econ. Ent. 23: 877-879, 1930) to be approximately as follows:

| Rotenone | Deguelin | Tephrosin | Toxicarol |
|---|---|---|---|
| 400 | 40 | 10 | 1 |

Both rotenone and deguelin are more efficient than nicotine in killing aphids.

Patents relating to derris, cube and tephrosia have been reviewed by the author (*Soap*, 6: 105-109, 1930). The basic patent covering the use of derris extract as an insecticide expired in June, 1930, and the use of derris or derris extracts in insecticides is now open to the free use of anyone.

The keeping qualities of rotenone are now being investigated. In the dried root and in pure form, rotenone appears to remain undecomposed indefinitely. In some solutions, for example, in pyridine, rotenone decomposes rapidly (apparently oxidizing) and even in acetone it suffers a slow change. In benzene (benzol) it remains practically unaffected for at least a month. Considerable work is now being done to ascertain the best way to incorporate rotenone in a vehicle in which it will not suffer loss in toxicity on long standing and which can be mixed with water to form a finely dispersed suspension. Rotenone is sensitive to the action of alkalies and should be brought into contact with aqueous soap solutions only shortly before spraying. Davidson (J. Econ. Ent. 23: 868-874, 1930) has obtained excellent results by spraying a suspension of rotenone formed by adding an acetone solution to water, indicating that it may not be necessary to use soap as a wetting agent.

*Summary*

ROTENONE, found in derris, cube and other fish poison plants, is more potent than nicotine as a contact insecticide and more toxic than lead arsenate as a stomach poison to some caterpillars. It is harmless to domestic animals—dogs, cats, sheep, pigs, and chickens—when eaten by them. Rotenone is also effective in the form of a 1 per cent. dust against caged cockroaches and when dissolved in kerosene it makes a good fly spray. Crude rotenone, mixed with the other constituents of the roots, can be extracted from derris to cost not more than twenty-five dollars a pound. At this price it is more economical to use than nicotine at three dollars a pound because it is more than eight times as powerful, or the pyrethrins from pyrethrum flowers, which cost not less than thirty-five dollars a pound. The supply of rotenone is increasing due to the development of higher rotenone-yielding varieties of derris and through increased acreage, and the cost may be expected to drop accordingly.

I might say in addition to the test that I have described here, recent work done by Dr. Back and Dr. Cotton of the Bureau of Entomology in cooperation with our laboratory indicates that rotenone is a very excellent moth-proofing material. Dilute solutions of rotenone in acetone, for example, were found very effective in imparting moth resistant properties to woolen goods.

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Mabel Garrison, former Metropolitan prima donna and internationally known concert singer, is at present on the national broadcasting program sponsored by McCormick & Co., Baltimore.

## Announce I. & D. Committees

President Robert C. White has recently announced his committee appointments through the office of the secretary of the Insecticide and Disinfectant Manufacturers Association. They follow:

### Insecticide Committee

C. P. McCormick, Chairman, McCormick & Co.
M. J. Busch, Allaire, Woodward & Co.
Donald N. Gilpin, Black Flag Company
F. M. Sieg, Enoz Chemical Company
Wallace Thomas, Gulf Refining Co.
R. M. Bagley, R. M. Hollingshead Co.
James Rodden, Komo Chemical Co.
Charles F. Opitz, John Opitz, Inc.
L. G. Durr, Rigo Manufacturing Co.
M. H. Hopkins, Tanglefoot Co.
Edgar A. Murray, Edgar A. Murray Co.
Preston B. Heller, B. Heller & Co.
Norman C. Hayner, N. C. Hayner Co.

### Standardization of Insecticides

Dr. Charles H. Peet, chairman, Rohm & Haas Co.
F. C. Nelson, Stanco, Inc.
Dr. John Glassford, McCormick & Co.
C. B. Gnadinger, McLaughlin, Gormley King Co.
Dr. Alfred Weed, John Powell & Co.
N. J. Gothard, Sinclair Refining Co.
Dr. N. J. G. Alozerij, Shell Petroleum Corpn.
Dr. O. F. Hedenburg, Toledo Rex Spray Co.

### Disinfectant Committee

Peter Dougan, chairman, Merck & Co.
S. H. Bell, Koppers Products Company
Irving Levy, American Disinfecting & Oil Corpn.
P. W. Smith, Arizona Disinfectant Co.
James Varley, Baird & McGuire, Inc.
Samuel Cabot, Samuel Cabot, Inc.
H. A. Nelson, Chemical Supply Co.
D. W. Tanenbaum, Idico Corpn.
Walter R. Hills, Masury-Young Co.
P. J. Walsh, Phinotas Chemical Co.
D. N. Calkins, Rochester Germicide Co.
Frank Symonds, Salem Chemical & Supply Co.
S. S. Selig, Selig Company
M. D. Gill, Tar Products Corpn.
M. M. Marcuse, West Disinfecting Co.

### Standardization of Disinfectants

Dr. William Dreyfus, chairman, West Disinfecting Co.
Dr. H. D. Pease, Pease Laboratories
Burton G. Philbrick, Skinner & Sherman, Inc.
Dr. George F. Reddish, Lambert Pharmacal Co.
J. H. Wright, Zonite Products Co.
William A. Hadfield, General Laboratories, Inc.
Dr. B. T. Woodward, H. Clay Glover Co.

### Standardization of Nomenclature

Dr. George F. Reddish, chairman, Lambert Pharmacal Co.
Dr. H. D. Pease, Pease Laboratories
Burton G. Philbrick, Skinner & Sherman, Inc.
Dr. C. C. McDonnell, Food & Drug Administration, U. S. Dept. of Agriculture

### Entertainment Committee

Grant A. Dorland, chairman, MacNair-Dorland Co.
M. Lemmermeyer, Givaudan-Delawanna, Inc.
O. L. Williams, Williams Sealing Corporation

### Liquid Soap Committee

V. W. Mider, chairman, U. S. Chemical Co.
R. H. Young, Davies-Young Soap Co.

### Standardization of Liquid Soaps

D. J. Bachrach, chairman, Clifton Chemical Co.
J. L. Brenn, Huntington Laboratories, Inc.
F. J. Pollnow, Vestal Chemical Co.

### Trade Ethics Committee

Evans E. A. Stone, chairman, Wm. Peterman, Inc.
Fred A. Hoyt, Frederick Disinfectant Co.
D. N. Calkins, Rochester Germicide Co.

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# Limitations of Phenol Coefficients of Coal-Tar Disinfectants*

By C. M. BREWER and G. L. A. RUEHLE
Food and Drug Administration, Dept. of Agriculture

THE aim of many researches since disinfectants were first studied has been to devise a simple laboratory test for inidicating the value of a germicide under practical conditions of use. As a result of this effort, the idea of the phenol coefficient has been conceived, and today in integral part of the bacteriological examination of a disinfectant consists in the determination of its phenol coefficient. Its value lies in its convenience and reliability when carried out under strictly standardized laboratory conditions. Unfortunately, the phenol coefficient test does not duplicate accurately the many diversified conditions met with in the fields in which disinfectants are used. In fact, it is too much to expect a single laboratory test to accomplish this. However, there seems to be a tendency, even among experienced workers, to place too much reliance upon the phenol coefficient. Attempts have been made with the usual types of disinfectants to establish a ratio between the killing dilutions for *B. typhosus* (*Eb. typhi*) and those for the other common pathogens, and thus from the *B. typhosus* phenol coefficient to specify the desirable dilutions to be used for certain pathogenic organisms under certain conditions. This, of course, would result in a great saving in time and labor.

Philbrick *(1)* has recently tested four coal-tar disinfectants against several pathogenic organisms, and concludes from his experiments that if the *B. typhosus* phenol coefficient of a coal-tar disinfectant is known, it is possible to calculate the approximate efficiency of the preparation against *Staphylococcus aureus, B. diphtheriae, Streptococcus hemolyticus,* and *Pneumococcus.* Such a statement, however, must be closely examined, since numerous considerations and difficulties underlie all attempts to make generalizations in this field. At present sufficient work has not been done to determine a criterion of resistance for the great bulk of the pathogenic species. For instance, any figure purporting to give the *Strep. hemolyticus* phenol coefficient of a certain disinfectant is likely to be grossly misleading in the absence of work on the resistance to disinfectants of a large number of strains of this organism. In general, it may be said that for every different germicide there is a different ratio between the *B. typhosus* phenol coefficient and the phenol coefficient for other organisms. Thus, a chlorine disinfectant having a *B. typhosus* phenol coefficient of 6.0 might also have a *Staph aureus* phenol coefficient of 6.0, whereas a mercury compound having a *B. typhosus* phenol coefficient of 6.0 (or even 20.0) would in all probability have a *Staph. aureus* phenol coefficient far below 1.

It is true that the ingredients of the coal-tar disinfectants do not present such extreme variations as the examples noted, but nevertheless the complex nature of these disinfectants necessitates consideration of this difference in behavior toward different organisms.

In view of the fact that Philbrick reported on the results of only four disinfectants of this type, it seemed desirable to collect data on a much larger number of such preparations before accepting his conclusions as final. We have used the same type of disinfectant[1] (coal-tar disinfectant) as that used by Philbrick and have compared the *B. typhosus* and *Staph. aureus* phenol coefficients. Our work was limited to an organism whose resistance to phenol has been pretty well established and accepted, the Department of Agriculture strain of *Staphylococcus aureus.*

The *B. typhosus* and *Staph. aureus* phenol coefficients were obtained from 206 samples recently received at this laboratory. The results shown on

*In *Industrial & Engineering Chemistry,* Feb., 1931.

[1] The coal-tar disinfectant, as stated above, is not a specific compound. The proportions and kinds of phenols, neutral oils, or other ingredients may vary widely, but if it be necessary to limit the disinfectant to a single compound of known concentration before we can use the phenol coefficient to calculate the desired information, such knowledge would be of little practical use.

the cloudy emulsifying type of disinfectants are given in Table I, and those of the clear solution type, similar to liquor *Cresolis Compositus* in Table II. Both the *Staph. aureus* and *B. typhosus* coefficients were determined by the R. W. modified method *(2)* in use for some years at the Department of Agriculture and used by Philbrick. It will be noted that the list includes preparations having **B. typhosus** phenol coefficients ranging all the way from 0.66 to 19.5, which covers the usual range of products offered in the market. The ratio of the two coefficients is given in the third column. It is realized, of course, that calculating the phenol coefficients to the second decimal place may seem to give a false inference as to the accuracy of the method employed, and for this reason only one decimal place is customarily given. In this case, however, such a large proportion of the *Staph. aureus* phenol coefficients are below unity that a wide disparity from the true ratio would result by eliminating the second decimal place. If Philbrick were correct in his conclusion, a fairly constant ratio between the two coefficients should be maintained, since his figures indicate a ratio of approximately 4 or 5 to 1.

**Table I—Coal-Tar Disinfectants Giving Milky Solutions**

| Phenol Coefficients | | Approx. Ratio of Coefficients | Phenol Coefficients | | Approx. Ratio of Coefficients |
|---|---|---|---|---|---|
| *B. typhosus* | *Staph. aureus* | | *B. typhosus* | *Staph. aureus* | |
| 0.66 | 0.25 | 3:1 | 3.3 | 1.0 | 3:1 |
| 0.8 | 0.04 | 20:1 | 3.6 | 0.33 | 11:1 |
| 0.8 | 0.4 | 2:1 | 3.6 | 0.67 | 5:1 |
| 0.9 | 0.17 | 5:1 | 3.6 | 0.67 | 5:1 |
| 1.4 | 0.1 | 14:1 | 3.6 | 0.75 | 5:1 |
| 1.55 | 0.12 | 12:1 | 3.9 | 0.25 | 16:1 |
| 1.55 | 0.15 | 10:1 | 3.9 | 0.33 | 12:1 |
| 1.7 | 0.12 | 14:1 | 3.9 | 0.33 | 12:1 |
| 1.7 | 0.17 | 10:1 | 3.9 | 0.33 | 12:1 |
| 1.7 | 0.25 | 7:1 | 3.9 | 0.33 | 12:1 |
| 1.7 | 0.5 | 3:1 | 3.9 | 0.4 | 10:1 |
| 1.7 | 0.66 | 3:1 | 3.9 | 0.4 | 10:1 |
| 1.7 | 0.66 | 3:1 | 3.9 | 0.4 | 10:1 |
| 1.7 | 0.66 | 3:1 | 3.9 | 0.4 | 10:1 |
| 1.8 | 0.33 | 5:1 | 3.9 | 0.5 | 8:1 |
| 2.0 | 0.12 | 16:1 | 3.9 | 0.5 | 8:1 |
| 2.0 | 0.15 | 13:1 | 3.9 | 0.5 | 8:1 |
| 2.0 | 0.25 | 8:1 | 3.9 | 0.5 | 8:1 |
| 2.0 | 0.25 | 8:1 | 3.9 | 0.5 | 8:1 |
| 2.0 | 0.33 | 6:1 | 3.9 | 0.6 | 7:1 |
| 2.0 | 0.33 | 6:1 | 3.9 | 0.6 | 7:1 |
| 2.0 | 0.33 | 6:1 | 3.9 | 0.67 | 6:1 |
| 2.1 | 0.33 | 6:1 | 3.9 | 0.67 | 6:1 |
| 2.2 | 0.12 | 18:1 | 3.9 | 0.67 | 6:1 |
| 2.2 | 0.17 | 13:1 | 3.9 | 0.67 | 6:1 |
| 2.2 | 0.17 | 13:1 | 4.2 | 0.33 | 13:1 |
| 2.2 | 0.17 | 13:1 | 4.2 | 0.8 | 5:1 |
| 2.2 | 0.20 | 11:1 | 4.4 | 0.33 | 13:1 |
| 2.2 | 0.25 | 9:1 | 4.4 | 0.4 | 11:1 |
| 2.2 | 0.25 | 9:1 | 4.4 | 0.5 | 9:1 |
| 2.2 | 0.25 | 9:1 | 4.4 | 0.5 | 9:1 |
| 2.2 | 0.25 | 9:1 | 4.4 | 0.5 | 9:1 |
| 2.2 | 0.25 | 9:1 | 4.4 | 0.5 | 9:1 |
| 2.2 | 0.33 | 7:1 | 4.4 | 0.5 | 9:1 |
| 2.2 | 0.33 | 7:1 | 4.4 | 0.5 | 9:1 |
| 2.2 | 0.33 | 7:1 | 4.4 | 0.6 | 7:1 |
| 2.2 | 0.33 | 7:1 | 4.4 | 0.6 | 7:1 |
| 2.2 | 0.33 | 7:1 | 4.4 | 0.67 | 7:1 |
| 2.2 | 0.33 | 7:1 | 4.4 | 0.67 | 7:1 |
| 2.5 | 0.12 | 20:1 | 4.4 | 0.67 | 7:1 |
| 2.5 | 0.33 | 8:1 | 4.4 | 0.67 | 7:1 |
| 2.5 | 0.33 | 8:1 | 4.4 | 0.67 | 7:1 |
| 2.7 | 0.33 | 8:1 | 4.4 | 0.67 | 7:1 |
| 2.8 | 0.17 | 17:1 | 4.4 | 0.67 | 7:1 |
| 2.8 | 0.17 | 17:1 | 4.4 | 0.67 | 7:1 |
| 2.8 | 0.17 | 17:1 | 4.4 | 0.67 | 7:1 |
| 2.8 | 0.25 | 11:1 | 4.4 | 0.75 | 6:1 |
| 2.8 | 0.25 | 11:1 | 4.4 | 0.83 | 5:1 |
| 2.8 | 0.25 | 11:1 | 4.4 | 1.0 | 4:1 |
| 2.8 | 0.25 | 11:1 | 4.4 | 1.0 | 4:1 |
| 2.8 | 0.30 | 9:1 | 4.7 | 0.83 | 6:1 |
| 2.8 | 0.33 | 8:1 | 5.0 | 0.33 | 15:1 |
| 2.8 | 0.33 | 8:1 | 5.0 | 0.5 | 10:1 |
| 2.8 | 0.33 | 8:1 | 5.0 | 0.67 | 8:1 |
| 2.8 | 0.33 | 8:1 | 5.0 | 0.67 | 8:1 |
| 2.8 | 0.4 | 7:1 | 5.0 | 0.75 | 7:1 |
| 2.8 | 0.4 | 7:1 | 5.0 | 0.75 | 7:1 |
| 2.8 | 0.4 | 7:1 | 5.0 | 0.75 | 7:1 |
| 2.8 | 0.5 | 6:1 | 5.0 | 0.83 | 6:1 |
| 2.8 | 0.5 | 6:1 | 5.0 | 0.83 | 6:1 |
| 2.8 | 0.6 | 5:1 | 5.0 | 1.0 | 5:1 |
| 2.8 | 0.67 | 4:1 | 5.0 | 1.0 | 5:1 |
| 2.8 | 0.83 | 3:1 | 5.0 | 1.17 | 4:1 |
| 3.0 | 0.25 | 12:1 | 5.0 | 1.17 | 4:1 |
| 3.0 | 0.33 | 9:1 | 5.3 | 0.5 | 11:1 |
| 3.0 | 0.33 | 9:1 | 5.5 | 0.67 | 8:1 |
| 3.0 | 0.5 | 6:1 | 5.5 | 0.67 | 8:1 |
| 3.0 | 0.5 | 6:1 | 5.5 | 0.67 | 8:1 |
| 3.3 | 0.25 | 13:1 | 5.5 | 0.83 | 7:1 |
| 3.3 | 0.25 | 13:1 | 6.1 | 0.5 | 12:1 |
| 3.3 | 0.25 | 13:1 | 6.1 | 0.83 | 7:1 |
| 3.3 | 0.25 | 13:1 | 6.1 | 0.9 | 7:1 |
| 3.3 | 0.3 | 11:1 | 6.1 | 1.5 | 4:1 |
| 3.3 | 0.33 | 10:1 | 6.6 | 0.83 | 8:1 |
| 3.3 | 0.33 | 10:1 | 6.6 | 0.83 | 8:1 |
| 3.3 | 0.33 | 10:1 | 7.2 | 1.1 | 6:1 |
| 3.3 | 0.33 | 10:1 | 7.7 | 1.7 | 5:1 |
| 3.3 | 0.33 | 10:1 | 8.0 | 1.17 | 7:1 |
| 3.3 | 0.4 | 8:1 | 8.8 | 1.25 | 7:1 |
| 3.3 | 0.5 | 7:1 | 12.2 | 5.0 | 2:1 |
| 3.3 | 0.5 | 7:1 | 12.5 | 2.5 | 5:1 |
| 3.3 | 0.5 | 7:1 | 15.0 | 2.5 | 6:1 |
| 3.3 | 0.5 | 7:1 | 16.6 | 5.0 | 3:1 |
| 3.3 | 0.6 | 6:1 | 17.7 | 10.0 | 2:1 |
| 3.3 | 0.6 | 6:1 | 19.5 | 4.1 | 5:1 |
| 3.3 | 0.67 | 5:1 | | | |
| 3.3 | 0.67 | 5:1 | | | |

**Table II—Cresol Compounds and Compounds Forming Clear Solutions**

| Phenol Coefficients | | Ratio of Coefficients |
|---|---|---|
| *B. typhosus* | *Staph. aureus* | |
| 0.66 | 0.33 | 2.0:1 |
| 1.7 | 0.83 | 2.0:1 |
| 1.7 | 1.0 | 1.7:1 |
| 1.7 | 1.0 | 1.7:1 |
| 1.7 | 1.0 | 1.7:1 |
| 1.7 | 1.0 | 1.7:1 |
| 1.7 | 1.0 | 1.7:1 |
| 1.7 | 1.17 | 1.5:1 |
| 1.7 | 1.17 | 1.5:1 |
| 1.7 | 1.17 | 1.5:1 |
| 1.7 | 1.33 | 1.3:1 |
| 1.8 | 1.0 | 1.8:1 |
| 1.8 | 1.33 | 1.3:1 |
| 2.0 | 0.83 | 2.4:1 |
| 2.0 | 0.83 | 2.4:1 |
| 2.0 | 1.0 | 2.0:1 |
| 2.2 | 1.17 | 1.9:1 |
| 2.2 | 1.25 | 1.8:1 |
| 2.2 | 1.25 | 1.8:1 |
| 2.2 | 1.5 | 1.5:1 |
| 2.2 | 1.5 | 1.5:1 |
| 2.8 | 1.67 | 1.7:1 |
| 2.8 | 1.67 | 1.7:1 |
| 2.8 | 2.25 | 1.2:1 |
| 2.8 | 2.3 | 1.2:1 |
| 2.8 | 2.67 | 1.1:1 |
| 3.3 | 1.83 | 1.8:1 |
| 3.3 | 2.0 | 1.7:1 |
| 3.3 | 2.1 | 1.6:1 |
| 3.3 | 2.1 | 1.6:1 |
| 3.3 | 2.5 | 1.3:1 |
| 3.9 | 2.5 | 1.6:1 |
| 4.4 | 2.1 | 2.1:1 |
| 5.0 | 2.9 | 1.7:1 |

The data in the tables need very little discussion. The lack of any definite or reasonably fixed relation between the first two columns is quite apparent. It may be seen that the ratio between the two coefficients varies from 2.0 to 20.0, a discrepancy of 1000 per cent. In the case of the phenol and cresol preparations which form clear solutions, one might expect to find a very close comparison to phenol itself—i. e., a ratio between coefficients of 1 to 1. However, in the coefficients of the 34 preparations given in Table II, deviations of 100 per cent are noted, although in general the ratios are much more consistent than in the other type of preparations.

From these figures we may conclude it is impossible to calculate the *Staph. aureus* phenol coefficient from the *B. typhosus* coefficient, at least in the case of coal-tar phenol disinfectants, and that the phenol coefficient is limited in usefulness to interpretations based on comparisons of dif-

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# Nationally Advertised Brands in the Small Town Market

IN A RECENT survey made for the *Household Magazine* under the supervision of Walter Mann & Staff, New York City, considerable interesting information about small town markets for soaps, insecticides, etc., was uncovered. The survey, which involved personal conferences with executives of one hundred leading drug, grocery, hardware and dry goods jobbers, showed that, contrary to general belief, small town markets are not materially different from urban markets. Nationally advertised brands are in almost every case the leaders, and the small town markets are not, as is sometimes supposed, dominated by private brands. Consumers can afford to purchase national brands, and distribution is sufficiently good so that these are readily available.

In investigating brand preferences in the various groups of products, jobbers were asked to give the three best sellers in each class. The results were tabulated on the basis of three points for a first place, two for a second and one for third. When the results were compiled the following brand preferences were shown in the small town markets:

| *Brand* | *Rating* |
|---|---|
| **Toilet Soap** | |
| Palmolive | 28 |
| Lux | 19 |
| Cuticura | 14 |
| Ivory | 9 |
| Woodbury | 8 |
| Colgate | 7 |
| Life Buoy | 7 |
| **Laundry Soap** | |
| Procter & Gamble* | 39 |
| Colgate's Octagon* | 23 |
| Fels Naphtha | 16 |
| Crystal White | 16 |
| Kirk's Flake | 5 |
| Kirkman | 4 |
| **Soap Flakes** | |
| Procter & Gamble | 40 |
| Lux | 37 |
| Crystal White | 7 |
| Colgate | 6 |
| Kirkman | 5 |
| Supersuds | 5 |
| Kirk | 5 |
| Oxydol | 3 |
| **Kitchen Cleansers** | |
| Old Dutch Cleanser | 56 |
| Gold Dust | 20 |
| Kitchen Klenzer | 12 |
| Bon Ami | 9 |
| Bab-O | 4 |
| Brillo | 3 |
| Swift's Pride | 2 |
| Rinso | 2 |
| **Tooth Pastes** | |
| Pepsodent | 41 1/3 |
| Listerine | 29 |
| Ipana | 22 |
| Colgate's | 10 5/6 |
| Dr. West's | 6 |
| Squibb's | 5 1/3 |
| Pebeco | 3 1/2 |
| **Toilet Preparations** | |
| Coty | 27 |
| Hudnut | 14 |
| Pond's | 12 |
| Colgate | 11 |
| **Antiseptics** | |
| Listerine | 56 |
| Lavoris | 17 |
| Lysol | 9 |
| Zonite | 6 |
| Glyco Thymolin | 4 |
| **Shampoos** | |
| Mulsified Coconut Oil | 34 |
| Packers | 18 |
| Fitch | 15 |
| Golden Glint | 8 |
| Wildroot | 4 |
| Watson's Coconut Oil | 4 |

*Includes all products mentioned under the general name.

| *Brand* | *Rating* |
|---|---|
| **Insecticides** | |
| Flit | 33 |
| Flytox | 27 |
| Black Flag | 10 |
| Dethol | 5 |
| **Furniture Polish** | |
| O'Cedar | 48 |
| Liquid Veneer | 11 |
| Whiz | 3 |

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## Coconut Oil

(*From Page* 81)

AND now a word about the chemical analysis of coconut oil. It is approximately as follows:

| | |
|---|---|
| Iodine Value | 9.00 — 13.00 |
| Saponification | 250. —260. |
| Acid Value | .5 — 12.0 |
| Specific Gravity | .924— .926 |
| Melting Point | 74° F. — 76° F. |

The high saponification value is due to the presence of large proportions of the glycerides of lauric and myristic acids. Coconut oil is easily saponified with concentrated caustic, and the soap is easily precipitated by the usual addition of salt.

The oil obtained from fresh copra is yellowish-white, but when melted looks somewhat brownish-yellow. At a temperature below 70 degrees F. it is crystalline and brittle. It has a characteristic coconut taste and smell, the strength of either depending upon the free fatty acids present. The free fatty acid content has an important bearing, inasmuch as the lower the free fatty acid present the more economically can the oil be refined. Fresh copra will produce an oil of lower free fatty acid than copra which has been stored a considerable length of time. It will therefore be seen that the oil produced in the Philippines has an advantage in this respect as against oil produced in the United States from copra that is months in transit. However, from the United States crushers' standpoint, the advantage is minimized in that they are able to secure a slightly higher oil yield from older copra, though the free fatty acid content will probably average several points higher.

Manila and Ceylon coconut oils are the same in composition. The names are misnomers and are sometimes confused on the part of the trade as they give the impression of being different grades. Crude coconut oil would be the more correct name. When oil is produced from fresh, good quality copra, its composition remains the same regardless of origin. This crude oil is used mainly in the manufacture of cheaper grades of soap, particularly where color is not of prime importance.

IN recent years, there has been a strong demand on the part of the public for white soaps. For such products, a white oil is required. On the coast of Malabar, natives very carefully produced what they termed Cochin copra, which in turn produced a fine, white oil. This oil established a standard for color. However, its supply was not equal to the demand, and scientists soon found a method to bleach crude coconut oil, and also neutralize the free fatty acid content, and to standardize the quality as against the uncertain acid value of the native Cochin. This oil was named Cochin, so today that term represents quality rather than origin. Cochin coconut oil is a great favorite with the manufacturers of white soaps in bars, chips, flakes, liquid soaps and shampoos.

While the major use for coconut oil is in the soap industry, increasingly larger quantities are going into the manufacture of food products, principally nut butters. Naturally no nut butter could become popular if it had the slightest disagreeable taste or odor. Science was again called upon and found by a simple process of steaming that the coconut odor and taste can be removed, and that the resultant product was a most palatable and agreeable base in the manufacture of nut butters. Thus edible coconut oil was introduced, an oil, water-white in color, neutral in free fatty acid and free from taste and odor, smooth in texture and of the consistency of dairy butter.

The use of edible oil soon spread to the bakery and confectionery trades. This opened another problem, as in those trades melting points are a factor and in some of their products, they required an oil that would remain solid in temperatures ranging as high as 110 degrees F. Science again came to the fore and found that the introduction of hydrogen would give the desired melting point and the demand for such an oil was again met.

It will be seen that the uses for coconut oil are many, and they fill an important part in our daily lives. A great deal more could be written about each individual phase, but this article has of necessity been brief. Therefore we could only skim over the surface and give a short description of the industry as a whole.

Importations of copra into the United States in 1929 amounted to 570,000,000 pounds. Over half of this came from the Philippine Islands. In addition to this, there were 411,000,000 pounds of coconut oil imported. The value of these coconut

products imported by manufacturers in the United States amounted to approximately $54,000,000 in 1929. Similar quantities of the products were imported in 1930.

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Glyco Products Co., Brooklyn, is now offering a new low cost product for preparing soluble pine oil which can be used without heat or any special appartus. One part of the product, called Solv-oil, when mixed cold with six parts of pine oil, kerosene, or similar product, is said to produce a clear homogenous solution. This mixed with water gives a milky emulsion with disinfecting and deodorant properties.

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## Limitations of Phenol Coefficients

(*From Page* 105)

ferent disinfectants against the test organisms alone and only under the prescribed conditions of the tests.

Noting the absence of a constant ratio of the phenol coefficients of a single type of disinfectant when tested against two organisms of standardized resistance, and having in mind the lack of standardization among other species of pathogenic bacteria and the fact that the resistance among individual strains of any one species varies widely, it seems reasonable in the present state of our knowledge to conclude that any attempt to estimate the efficiency of a disinfectant against other species of pathogenic bacteria from the *B. typhosus* phenol coefficient is unreliable and unsafe.

Literature Cited

(1) Philbrick, IND. ENG. CHEM., 22, 618 (1930)
(2) Reddish, *J. Am. Public Health Assocn*, 17, 320 (April, 1927)

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## Sprayers and Sprayers

(*From Page* 95)

damaging to clothing, walls, and the like, goes without saying. It is no exaggeration to say that poor quality sprayers are the worst enemy of the insecticide business.

The mania to buy most everything today cheaper than it has ever been bought before, has extended to the purchase of sprayers by some manufacturers and jobbers. In driving down prices, it is only to be expected that the quality of the sprayers is also dragged down. How they expect their insecticides to be effective under the handicap of bad spraying is hard to see. A sprayer which sprays, which really atomizes the liquid, cannot be too cheap, and one which does not atomize the insecticide, means ineffective usage, and ineffectiveness is a "black eye" for any insecticide.

## Unify Koppers Coal Tar Sales

Effective March 1 the sale and distribution of products made by American Tar Products Co., Koppers Products Co., and Tar Products Corp., all subsidiaries of The Koppers Co., were consolidated and unified under the name of Koppers Products Co. The president of the new company is J. N. Forker with S. H. Bell, S. H. Fields, P. L. Griffiths and M. D. Gill as vice-presidents. Koppers Products Co., with plants and branches located in all parts of the country, will be prepared to supply all of the materials previously offered by the individual subsidiaries, including raw materials for disinfectants, insecticides, etc., as well as finished products in bulk, under the Koppers brand or under private label.

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An investigation into the costs of producing creosote oil both in United States and abroad may result if a recent resolution introduced into the U. S. Senate by Senator Royal S. Copeland of New York is acted on favorably. No duty change could be made at present as this item is now on the free list.

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A concern which sells a rat exterminator has recently signed a stipulation with the Federal Trade Commission agreeing to discontinue falsely representing that cats and dogs will not touch the product. It will also discontinue the practice of representing that its action on rats is such as to mummify the body, thus insuring against disagreeable odors.

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Expello Corporation, Dover, N. H., has added a new 75c package to its line of moth preventives. The new Expello No. 4 is specially prepared for use in vacuum cleaners and in protecting upholstered furniture, rugs, etc.

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Zonite Products Corp. has recently appointed Jordan Advertising Abroad, Inc., New York, to handle Zonite advertising in Latin America and the Far East. McCann-Erickson, Inc., New York, continue to direct domestic advertising for Zonite.

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The following officers of Norwich Pharmacal Co. were elected at a recent meeting: President, William G. Peckham; chairman of board, Robert D. Eaton; vice-presidents, Robert D. Eaton, Melvin C. Eaton, M. W. Stofer, Turner F. Currens and Frank L. McCartney; treasurer and general manager, Robert S. Eaton; secretary, J. F. Windolph.

## Opportunities for Export

The following opportunities for export of American soaps and allied products have come to the Bureau of Foreign and Domestic Commerce, Washington, D. C. American manufacturers can secure the full details of the inquiries by communicating with the Bureau, care of the Department of Commerce. Be sure to mention the number of Foreign Trade Opportunity in writing.

| | | | |
|---|---|---|---|
| 49,885 | Metal polish | Canada | Agency |
| 49,888 | Toilet preparations | Czechoslovakia | Agency or purchase |
| 49,895 | Toilet preparations | Germany | Agency |
| 49,920 | Toilet preparations | Yugoslavia | Agency or purchase |
| 49,980 | Metal polish | Brazil | Agency or purchase |
| 49,990 | Toilet preparations | Ecuador | Sole agency |
| 50,020 | Tooth paste | Denmark | Agency |
| 50,021 | Insecticides | Chile | Agency |
| 50,023 | Toilet preparations | Canada | Agency |
| 50,052 | Dental preparations | France | Agency |
| 50,081 | Toilet preparations | Argentina | Agency |
| 50,086 | Toilet soaps, cheap grade | Porto Rico | Agency |
| 50,148 | Tooth paste, high grade | Java | Agency |
| 50,150 | Disinfectants and insecticides | England | Agency |
| 50,155 | Toilet soaps and preparations | Czechoslovakia | Agency |
| 50,260 | Toilet preparations | Switzerland | Agency or purchase |
| 50,318 | Toilet soaps and preparations | Germany | Agency |
| 50,324 | Floor polishes | Poland | Agency or purchase |
| 50,328 | Cleansing compounds | Brazil | Agency |

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National Oil Products Company and its subsidiary, the Metasap Chemical Company, Harrison, N. J., report consolidated net income for the year ended December 31, 1930, totaling $223,599 after expenses, depreciation and Federal taxes. This was equal to $6.32 a share on 30,002 no-par common shares after 7 percent preferred dividends. It compared with $134,748, or $3.32 a common share in the previous year.

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Exports of disinfectants, deodorants, germicides, etc., totaled 324,066 pounds, valued at $27,915, in November, 1930. Canada bought 256,735 pounds. Prepared animal dip exports reached 123,987 pounds, with a value of $6,811. Liquid insecticide exports totaled 816,298 pounds, valued at $273,-142, with Argentina buying over a half-million pounds. Powder and paste insecticide exports were slightly under 100,000 pounds.

## Insecticide Bills in State Legislatures

In bulletins to members, dated March 5 and 6, the Insecticide & Disinfectant Manufacturers Association called attention to three bills, recently introduced in state legislatures, affecting the manufacture, sale and inspection of insecticides, disinfectants and fungicides. Delaware Senate Bill No. 190, introduced by Senator McCaulley, is patterned after the Federal Insecticide Act of 1910 but contains some provisions not found in that act. One of these provides for payment of a five dollar registration fee for each brand up to five, with additional brands at one dollar each. The language of the bill clearly indicates that it is intended to cover household insecticides, disinfectants, antiseptics, etc., as well as agricultural products. Another provision would give agents of the State Board of Agriculture, the proposed enforcing bureau, power to inspect plants, containers, etc., at any time, including the power to open packages without payment of the retail selling price.

An act to amend the agricultural and markets law has been introduced in the New York House by Representative Smith, No. 1439, which is the same as Senate Bill No. 1037. It defines "agricultural poisons" in broad terms which the association interprets to cover animal dips and sprays, also insecticides and disinfectants used on farms or animals. Every seller of such products would have to pay a $25.00 license fee for each product sold, one pound samples of which would have to be submitted for analysis. Branding is also covered in this measure. Missouri Senate Bill No. 387, introduced by Senator Clark, defines "economic poisons" and provides for their sale and use to prevent adulteration, misbranding and misrepresentation. The definition appears to definitely cover products of the insecticide and disinfectant industry. Registration at $50.00 per brand is provided for. Protest should be made at once to your customers in Delaware, New York and Missouri, also direct to the President or Speaker of each State body. Residents of these states should enter protest through their Senators and Representatives.

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American insecticides in Brazil are meeting severe competition from the "Shell" product, which is now second in volume of sales in spite of its relatively high price. The domestic product, "Unic" undersells foreign brands.

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Germicidal therapeutic compositions suitable for use on cuts and local infections comprise a neutral, stable alkali-metal salt of the mono-mercury derivative of tetraiodofluorescein, without any excess of alkali. U. S. Pat. No. 1,786,172.

## Trade Marks Granted

(*From Page* 55)

16, 1930. Serial No. 305,756. Published November 25, 1930. Class 4.

**280,086.** Cleanser. Polifina Products Co., Sacramento, Calif. Filed August 29, 1930. Serial No. 305,145. Published November 25, 1930. Class 4.

**280,095.** Polish. Invader Paint and Varnish Co., Chicago. Filed May 31, 1930. Serial No. 301,894. Published November 25, 1930. Class 16.

**280,097.** Germicide, Antiseptic, and Bactericide. Friend-Ullrich, Inc., Fort Smith, Ark. Filed October 29, 1930. Serial No. 307,317. Published December 2, 1930. Class 6.

**280,102.** Shampoo. Voigt Company, St. Louis. Filed October 27, 1930. Serial No. 307,234. Published December 2, 1930. Class 6.

**280,105.** Laundry Sour. F. H. Ross & Co., Charlotte, N. C. Filed October 20, 1930. Serial No. 306,965. Published November 25, 1930. Class 6.

**280,152.** Antiseptic Disinfectant. Johnson & Johnson, New Brunswick, N. J. Filed October 15, 1930. Serial No. 306,778. Published November 25, 1930. Class 6.

**280,178.** Insecticides and Deodorants. Tar Products Corp., Providence, R. I. Filed October 14, 1930. Serial No. 306,752. Published November 18, 1930. Class 6.

**280,303.** Deodorizing and Disinfecting Preparation. G. S. Robins & Co., St. Louis. Filed March 6, 1930. Serial No. 296,924. Published June 10, 1930. Class 6.

**280,323.** Brass Polish, Soaps, Etc. Cleanwell Mfg. Co., Chicago. Filed March 3, 1930. Serial No. 296,730. Published November 18, 1930. Class 4.

**280,362.** Cleaner. Harrison and Company, Haverhill, Mass. Filed October 2, 1930. Serial No. 306,335. Published December 2, 1930. Class 4.

**280,367.** Metal Polish and Cleaning Compounds. Superior Chemical Co., Houston, Tex. Filed September 6, 1930. Serial No. 305,419. Published December 2, 1930. Class 4.

**280,403.** Cleaning Preparation. Mackie Pine Oil Specialty Co., Covington, La. Filed May 31, 1930. Serial No. 301,962. Published December 2, 1930. Class 4.

**280,404.** Cleaning Preparation. Mackie Pine Oil Specialty Co., Covington, La. Filed May 31, 1930. Serial No. 301,963. Published December 2, 1930. Class 4.

**280,451.** Cleaning Preparation. Stanley Chemical Co., Detroit. Filed October 6, 1930. Serial No. 306,471. Published December 2, 1930. Class 4.

**280,634.** Polish. Stanco Inc., Wilmington. Filed September 3, 1930. Serial No. 305,290. Published December 9, 1930. Class 16.

**280,641.** Shampoos. Lawrence Laboratories, Memphis. Filed September 5, 1930. Serial No. 305,361. Published December 2, 1930. Class 6.

**280,721.** Insecticides. White Tar Co. of New Jersey, Inc., Kearny, N. J. Filed October 3, 1930. Serial No. 306,379. Published December 2, 1930. Class 6.

**280,733.** Polish. Germain H. Stadelman, Jamaica, N. Y. Filed October 22, 1930. Serial No. 307,066. Published December 9, 1930. Class 16.

**280,767.** Polish. Stanco Inc., Wilmington. Filed September 3, 1930. Serial No. 305,292. Published December 9, 1930. Class 16.

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### Soap Specifications for April 1

A series of soap specifications some of which have been revised slightly, recently issued by the Federal Specifications Board, will become mandatory upon all Government departments and agencies April 1, 1931. This list includes specifications for automobile soap (formerly USGMS 30; now P-S 561); chip soap (formerly USGMS 31; now P-S 566); cake grit soap (formerly USGMS 33; now P-S 571); liquid laundry soap (formerly USGMS 246; now P-S 586; powdered laundry soap (formerly USGMS 245; now P-S 596); soap powder (formerly USGMS 28; now P-S 606); salt water soap (formerly USGMS 29; now P-S 611); liquid toilet soap (formerly USG MS 27; now P-S 618); milled toilet soap (formerly USGMS 244; now P-S 621).

In most of the specifications, no material changes have been made in technical requirements, additions being made in some cases in the packaging and labelling requirements. The attempts upon the part of some organizations to establish a new standard for liquid toilet soap during the past year, did not meet with success, and the same standard in effect since 1922 was readopted. Copies of all the revised specifications may be secured by ordering by number from the Superintendent of Documents, Government Printing Office, Washington, D. C. at a cost of five cents each.

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United Chemicals, Inc., has leased space on the tenth floor of the Chrysler building for executive headquarters for itself and subsidiaries which include the following: Warner Chemical Co., Industial Chemical Corp., and Westvaco Chlorine Products Corp. The new quarters will be occupied about April 1.

## CLASSIFIED ADVERTISING

**Classified Advertising**—All classified advertisements will be charged for at the rate of ten cents per word, $2.00 minimum, except those of individuals seeking employment where the rate is five cents per word, $1.00 minimum. Address all replies to Classified Advertisements with Box Number, care of *Soap*, 136 Liberty St., New York.

### Positions Wanted

**Salesman**—Man with fifteen years experience selling cosmetics and drug products to department stores, drug and grocery jobbers, etc., desires to make new connection. Ten years selling in the South, and the last three years in and near New York. Will connect only with established firm of good reputation. Address Box 652, care *Soap*.

**Soap Maker**—A man capable of taking full charge of plant making all types of soap, including liquid and oil soaps, desires new connection. Thirty years' experience. Best references. Box 653, care *Soap*.

**Soap Maker**—German, with over twenty years' experience in Germany and South America, in manufacturing all grades and kinds of toilet, medicinal, laundry, potash, and liquid soaps, and chips, etc. Address Box 654, care *Soap*.

**Soap Maker**—With years of actual experience in manufacturing all grades and kinds of soaps and soap products. Address Box 655, care *Soap*.

**Chemist**—Young man experienced in soap, polish oil, and drug trades, desires position. Has had charge of laboratory. Location in New York preferred. Address Box 656, care *Soap*.

**Soap Maker** and Chemist with many years' experience making all kinds of laundry and toilet soaps, seeking change. Good references. Can take complete charge of manufacturing. Address Box 657, care *Soap*.

**Practical Soap Maker** wants position making all grades of rosin laundry soap, cold made and half boiled, all grades of potash and liquid soaps and shampoos, also flaked, shredded and powdered soap. Can also make floating soaps, toilet soap base, milled soaps and old style soaps. Glycerine

# RATIN

*a profitable side line!*

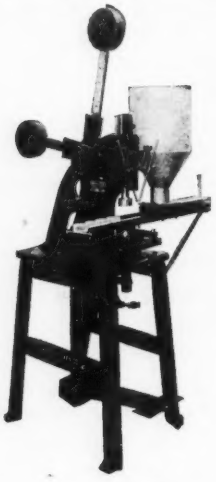
You are always looking for ways to increase your profits. Why not act as RATIN representative in your locality? This proved rat and mice exterminator may be handled along with your regular line of sanitary products at a nice profit.

*May we submit complete details?*

**The Ratin Laboratory, Inc.**

116 Broad Street, New York City

# HOUCHIN



*Machine-Made*

**DEODORIZING BLOCKS**

*Sell Best!*

Blocks made with this press, by the new cold pressed method, sell better and cost much less to make. Save 5% of your raw material, cut labor, and make a smooth, even, deodorizing block that will please your customers much more than the old style, irregular blocks. Complete cost details and manufacturing suggestions on request.

*Let us make some sample cakes with your own material.*

HOUCHIN MACHINERY COMPANY
HAWTHORNE NEW JERSEY

# SOAP MACHINERY

**A 35 Year Old Insecticide Line with Money-Back GUARANTEE**

For 35 years, Edgar A. Murray Insecticides have met the needs of the janitor supply trade satisfactorily. Those who sell them have found them absolutely reliable and uniform in quality at all times.

So sure are we that you, too, will be pleased with them that we offer them to you with an iron-clad money-back guarantee—"No Riddance, No Pay."

If you are not handling a line of guaranteed insecticides, get the Edgar A. Murray proposition. Mail the coupon TODAY for complete information, prices and discounts.

**EDGAR A. MURRAY CO.**
2729 Guoin Street Detroit, Mich.

*A Complete Line of Six Guaranteed Insecticides*

Fly, Ant, Rat, Bug, Mosquito, Moth

ROACH DOOM

MAIL THIS COUPON TODAY

EDGAR A. MURRAY CO.
2729 Guoin Street, Detroit, Mich.

Gentlemen:—Please send us further information regarding your insecticide line, prices, discounts, etc.

FIRM NAME .....

ADDRESS .....

CITY ..... STATE .....

# "FILMASEAL"

Trade Mark Reg. Patents Pending

**Airtight . . .**
**Leakproof . .**
**Tamperproof .**

- A transparent film sealed to top of container
- Plus our continuous thread screw cap
- Film must be removed to reach contents
- Used with standard C. T. bottles and jars
- Automatic application . . . no decrease in output
- Adapted to large scale production
- One of our films will serve your purpose

**FERDINAND GUTMANN & CO.**
**Bush Terminal No. 19 · Brooklyn, N. Y.**

SANISEAL METAL MILK CAPS . . . DISTILLED WATER CAPS
CROWN CORKS
CONTINUOUS THREAD CAPS . . . SPECIAL PURPOSE CAPS

*Closure Specialists Since 1890*

*Say you saw it in SOAP!*

extraction from spent lyes. Address Box 658, care *Soap*.

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**Superintendent**—Man with twenty years' experience and fine record in manufacture of soaps, textile soaps and specialties, desires new connection as plant manager or assistant. Technical education and practical experience combined. Address Box 662, care *Soap*.

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## Positions Open

**Wanted**—Salesman wanted by soap importer and jobber to cover Metropolitan territory among department, gift, etc. stores. State experience, etc. Box 659, care *Soap*.

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**Wanted**—Salesmen for all territories to carry high class lithographed imported labels and box tops for the soap and perfume trade. Stock and private designs. Apply to Herman Schoett, A.G., Rheydt, Germany. Advise experience, references and full details with application.

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**Representatives Wanted** — A new corporation handling full line of chemicals, oils, dyestuffs, specialties, industrial paints, etc., wants capable representatives to sell on commission basis. Answer in detail. Box 660, care *Soap*.

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**Representative**—Man wanted to cover two territories for old established and well-known manufacturer of disinfectants, insecticides, and sanitary specialties to large consumers and the jobbing trade in (1) Buffalo and Western New York and adjacent territory, (2) Southern Ohio and Western Pennsylvania. We are particularly interested in getting in touch with established sales organizations in these territories who do not handle a competing line. Address Box 661, care *Soap*.

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## For Sale

**Floor Brushes**—Aggressive jobbers will be interested in our distinctive fast-selling line of floor brushes. Write—"Jones of Jonesville," Jonesville, Mich.

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**Soap Formulas**—I am offering the formulas of the late J. A. Kyle, who for over 35 years was connected with some of the largest manufacturers of soaps, etc., in this country. Personal services will be given if required. Address W. E. Wilkinson,

174 Vreeland Ave., Rutherford, N. J., or western agents, Acme Oil Corp., 4650 Iowa St., Chicago, Ill.

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**For Sale**—One Empire State press. Excellent condition. $75.00. Address Embree Manufacturing Co., Elizabeth, N. J.

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**Succeed With Your Own Products**—Make-sell them yourself. Send for free catalog of Formulas, Processes, Trade-Secrets. Read "What Our Clients Say." Expert analytical work. Foremost Formula Service. H. Thaxly Co., Washington, D. C.

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**Soap Maker**—Man experienced, specializing in rosin laundry soaps. Can make good soap at two cents per pound, covering all expenses. Address Box No. 665, care *Soap*.

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A patented antiseptic and germicidal compound consists of the hydroxymercuri substitution product of a mixture of a purality of cresol isomers, one of which is meta-cresol, with mercuric chloride. U. S. Pat. No. 1,782,090.

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## Announce I. & D. Committees

(*From Page* 101)

### Publicity Committee

Ira P. MacNair, MacNair-Dorland Company

### Scientific Committee

Dr. Emil Klarmann, Lehn & Fink, Inc.

### Tariff Committee

C. C. Baird, Baird & McGuire, Inc.

### Foreign Trade Committee

V. D. Van Dyne, American Disinfecting Company

### Cooperative Advertising Committee

E. B. Loveland, Stanco, Inc.

### Committee on Raw Materials

W. J. Andree, chairman, Sinclair Refining Co.
Arthur O. Ponder, Dominion Tar & Chemical Co.
L. E. Goessmann, Innis, Speiden & Co.
Grant Thorn, International Combustion Tar & Chemical Corpn.
Billy B. Van, Pine Tree Products Co.
A. F. Wegener Standard Tar Products Co.

### Moth Proofing Materials

Roland Sturhahn, chairman, Monsanto Chemical Works
H. W. Hamilton, Koppers Products Co.
Melville Keim, Clean Home Products Co.
Austin Sherman, Crystal Products Co.
J. A. Cavanagh, Dow Chemical Co.
A. L. Feldman, Puritan Chemical Co.
E. J. Reefer, Reefer's No-Moth, Inc.

### Hypochlorite of Soda Disinfectants

William A. Hadfield, General Laboratories
J. H. Wright, Zonite Products Co.

### Formaldehyde Disinfectants

K. A. Dolge, C. B. Dolge Co.

### Program Committee

The Secretary.

### Membership Committee

All the members of the Board of Governors, except the President and Secretary.

*Where to buy*

# RAW MATERIALS AND EQUIPMENT

*for the Manufacture of Soaps and Sanitary Products.*

**NOTE:** This is a classified list of the companies which advertise regularly in *Soap.* It will aid you in locating advertisements of raw materials, bulk and private brand products, equipment, etc., in which you are particularly interested. Refer to the Index to Advertisements, on the following pages, for page numbers. *"Say you saw it in SOAP."*

## ADHESIVES

Grasselli Chemical Co.
Mechling Bros. Chemical Co.
National Adhesives Corp.
Philadelphia Quartz Co.
Standard Silicate Co.

## ALKALIES

Diamond Alkali Co.
Dow Chemical Co.
Hooker Electrochemical Co.
Niagara Alkali Co.
Solvay Sales Corp.
Stauffer Chemical Co.
Warner Chemical Co.
Welch, Holme & Clark Co.
Isaac Winkler & Bro. Co.

## AROMATIC CHEMICALS

Antoine Chiris Co.
Dodge & Olcott Co.
Dow Chemical Co.
P. R. Dreyer, Inc.
Felton Chemical Co.
Benj. French, Inc.
Fritzsche Brothers, Inc.
Givaudan-Delawanna, Inc.
Magnus, Mabee & Reynard
Merck & Co.
Monsanto Chemical Works
Newport Chemical Works
Polaks Frutal Works
Schering Corp.
George Silver Import Co.
Solvay Sales Corp.
A. M. Todd Co.
Ungerer & Co.
Van Ameringen-Haebler, Inc.
Vanillin-Fabrik
Albert Verley, Inc.

## BULK AND PRIVATE BRAND PRODUCTS

Alpine Chemical Co.
Baird & McGuire, Inc.
Chemical Compounding Corp.
Chemical Supply Co.
Clifton Chemical Co.
Davies-Young Soap Co.
Eagle Soap Corp.
Harley Soap Co.
Koppers Products Co.
Kranich Soap Co.
Edgar A. Murray Co.
Palmer Co.
John Powell & Co.
Ratin Laboratory
Geo. A. Schmidt & Co.
Stevens Soap Corp.
Tar Products Corp.
U. S. Sanitary Specialties Corp.
White Tar Co.
Windsor Wax Co.

## CANS

Continental Can Co.
Metal Package Corp.
William Vogel & Bro.

## CHEMICALS

Diamond Alkali Co.
Dow Chemical Co.
Grasselli Chemical Co.
Hooker Electrochemical Co.
Mechling Bros. Chemical Co.
Merck & Co.
Monsanto Chemical Works
Newport Chemical Works
Niagara Alkali Co.
Philadelphia Quartz Co.
Solvay Sales Corp.
Standard Silicate Co.
Stauffer Chemical Co.
Victor Chemical Works
Warner Chemical Co.
Welch, Holme & Clark Co.
Isaac Winkler & Bro. Co.

## COAL TAR RAW MATERIALS

(Cresylic Acid, Tar Acid Oil, etc.)

Baird & McGuire, Inc.
Barrett Co.
Dominion Tar & Chem. Co.
Koppers Products Co.
Monsanto Chemical Works
Tar Products Corp.
White Tar Co.

## CONTAINERS

(See also Steel Containers)

Bemis Bros. Bag Co. (Bags)
Cincinnati Mailing Device Co. (Paper Cans)
Sun Tube Corp. (Collapsible Tubes)

## DEODORIZING BLOCK HOLDERS

Eagle Soap Corp.
Palmer Co.
U. S. Sanitary Specialties Corp.
William Vogel & Bro.

## ESSENTIAL OILS

Antoine Chiris Co.
Dodge & Olcott Co.
P. R. Dreyer, Inc.
Fritzsche Brothers, Inc.
Magnus, Mabee & Reynard
Polaks Frutal Works
George Silver Import Co.
A. M. Todd Co.
Ungerer & Co.
Van Ameringen-Haebler, Inc.
Albert Verley, Inc.
Paolo Vilardi

*Continued on Page 126*

# RAW MATERIAL and EQUIPMENT GUIDE

*(Continued from Page 124)*

**NOTE:** This is a classified list of the companies which advertise regularly in *Soap.* It will aid you in locating advertisements of raw materials, bulk and private brand products, equipment, etc., in which you are particularly interested. Refer to the Index to Advertisements, on the following pages, for page numbers. *"Say you saw it in SOAP."*

## MACHINERY

Alsop Engineering Co. (Liquid mixing, filling and storage)
Chemical Equipment Co. (Glycerine Evaporators)
Anthony J. Fries (Soap Dies)
Houchin-Aiken Co. (Soap Machinery)
Huber Machine Co. (Soap Machinery)
Mixing Equipment Co. (Portable Mixers)
Proctor & Schwartz (Dryers)
C. G. Sargent's Sons Co. (Dryers)
Schwenck Safety Device Co. (Barrel Tilters)
Solutionizer Co. (Sudsing Equipment)
Sowers Mfg. Co. (Crutchers)
Stokes & Smith Co. (Packaging Machinery)
Wurster & Sanger, Inc. (Soap, Glycerine, Oil, Hydro plants)

## MACHINERY, USED

Consolidated Products Co.
R. B. Davis Co.
Newman Tallow & Soap Machinery Co.
Stein-Brill Co.

## METAL CAPS

Anchor Cap & Closure Corp.
Ferdinand Gutman & Co.
Williams Sealing Corp.

## OILS AND FATS

Acme Oil Corp.
Brown-Edwards Co.
Davidson Commission Co.
Emery Industries, Inc.
Spencer Kellogg & Sons
Leghorn Trading Co.
Newman Tallow & Soap Machinery Co.
Welch, Holme & Clark Co.

## PARADICHLORBENZENE

Dow Chemical Co.
Hooker Electrochemical Co.
Monsanto Chemical Works
Niagara Alkali Co.
Solvay Sales Corp.

## PERFUMING COMPOUNDS

Antoine Chiris Co.
Dodge & Olcott Co.
P. R. Dreyer, Inc.
Evergreen Chemical Co.
Felton Chemical Corp.
Fritzsche Brothers, Inc.
Givaudan-Delawanna, Inc.
Heine & Co.
E. M. Laning Co.
Magnus, Mabee & Reynard
Polaks Frutal Works
George Silver Import Co.
Ungerer & Co.
Van Ameringen-Haebler, Inc.
Albert Verley, Inc.

## PYRETHRUM PRODUCTS

(Insect Flowers, Powder and Pyr. Ext.)

Cino Chemical Co.
McCormick & Co.
McLaughlin, Gormley, King Co.
John Powell & Co.

## RAW MATERIALS, MISCELLANEOUS

Darco Sales Corp. (Decol. Carbons)
Franks Chem. Prods. Co. (Stearates)
General Naval Stores Co. (Pine Oil-Rosin)
Hercules Powder Co. (Pine Oil and Rosin)
Industrial Chemical Co. (Chalk)
Merck & Co. (Lanolin and Chlorophyll)
National Adhesives Corp. (Adhesives)
Rohm & Haas Co. (Insecticide Base)
Pylam Products Co. (Lathering Agent)

## SOAP COLORS

Fezandie & Sperrle
Pylam Products Co.

## SOAP DISPENSERS

Bobrick Mfg. Co.
Clifton Chemical Co.
Huntington Laboratories
Palmer Co.
U. S. Sanitary Specialties Co.

## SODIUM SILICATE

Grasselli Chemical Co.
Mechling Bros. Chemical Co.
Philadelphia Quartz Co.
Standard Silicate Co.

## SPRAYERS

American Can Co.
Breuer Electric Mfg Co.
Continental Can Co.
Dobbins Mfg. Co.
Electric Sprayit Co.
Hudson Mfg. Co.
Lowell Sprayer Co.
Potato Implement Co.
William Vogel & Bro.

## STEEL CONTAINERS

Niles Steel Products Co.
Republic Steel Package Co.
John Trageser Steam Copper Works (Pails and Drums)
Wilson & Bennett Mfg. Co. (Pails and Drums)

## TRI SODIUM PHOSPHATE

Bowker Chemical Co.
Grasselli Chemical Co.
Victor Chemical Works
Warner Chemical Co.

## Index to Advertisements

## Index to Advertisements (cont.)





*Say you saw it in SOAP!*

# INCREASE YOUR
# FLY SPRAY SALES
## *by improving the*
# ODORS

Samples of our new spray odors will be sent on request.

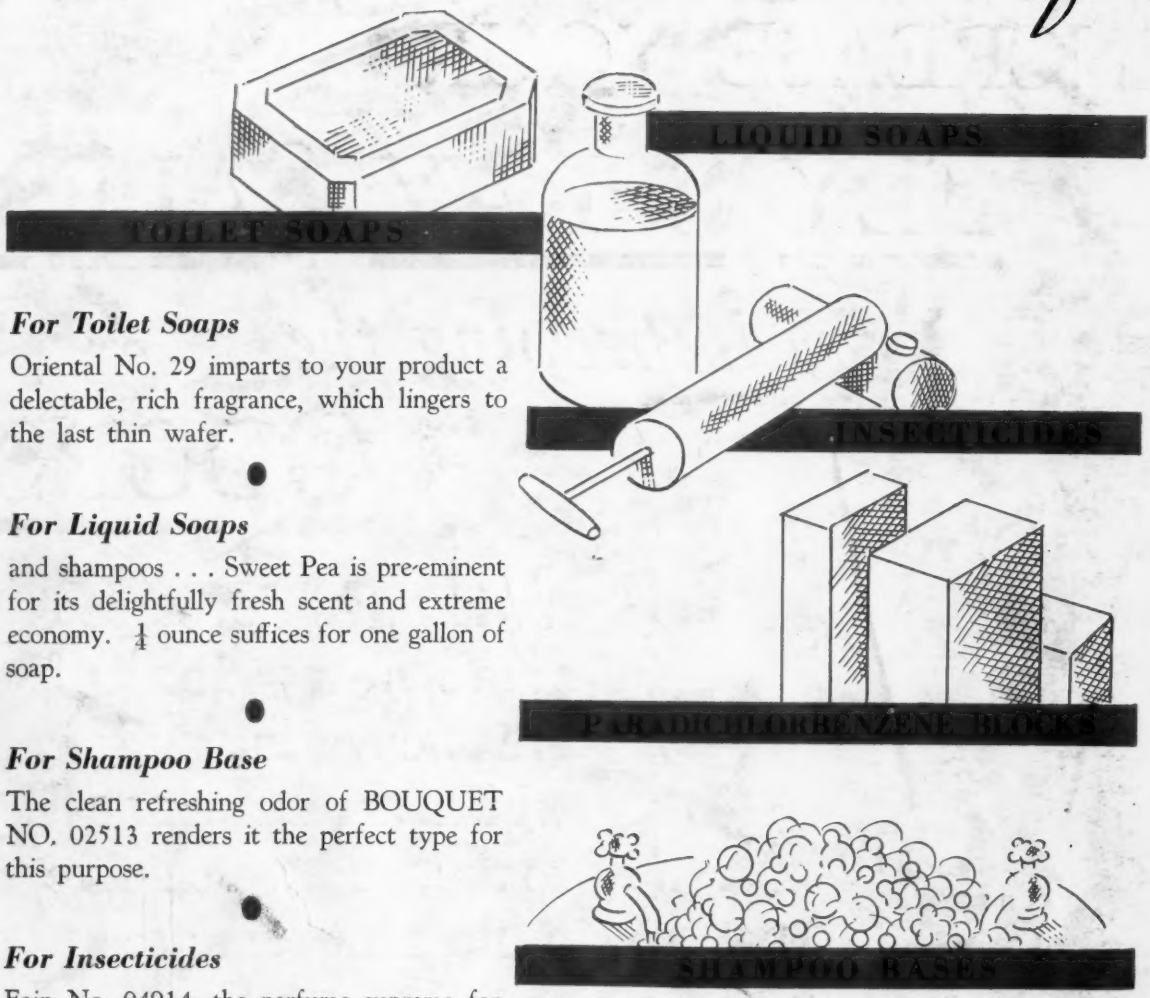
Trade GIVAUDAN AROMATIC PRODUCTS DELAWANNA Mark

WE have developed some new odors of great covering power which are economical to use, and which give a pleasant clean scent to the spray. Examine these before you select your new fly spray odor.

**Givaudan-Delawanna, Inc.**

80 FIFTH AVE. NEW YORK, N. Y.

# to MANUFACTURERS of




***For Toilet Soaps***

Oriental No. 29 imparts to your product a delectable, rich fragrance, which lingers to the last thin wafer.

***For Liquid Soaps***

and shampoos . . . Sweet Pea is pre-eminent for its delightfully fresh scent and extreme economy. ¼ ounce suffices for one gallon of soap.

***For Shampoo Base***

The clean refreshing odor of BOUQUET NO. 02513 renders it the perfect type for this purpose.

***For Insecticides***

Foin No. 04914, the perfume supreme for kerosene sprays. Completely and pleasantly masks unpleasant odors throughout every stage of evaporation.

***For Paradichlorbenzene Blocks***

Rose No. 03430 simultaneously evaporates with Paradichlorbenzene, and will neither discolor nor separate during the process.

Fritzsche Brothers Perfumes have been especially designed for each recommended purpose, and are offered to the trade on a basis of proven performance in actual work. These, as well as all other Fritzsche materials, may be used with complete confidence.

# FRITZSCHE BROTHERS, Inc.

78-84 BEEKMAN ST.
New York, N. Y.

*Proprietors of*
PARFUMERIES DE SEILLANS
*Seillans, France*

*Sole Agents in U. S. and Canada for*
SCHIMMEL & COMPANY
*Miltitz, (near Leipzig) Germany*